Graduate Council Curriculum Committee
October 9, 2019
2:30 p.m., HPA1 room 304

Agenda

1. Welcome and call to order
2. Review of minutes from September 25, 2019
3. General business
4. Fee, Program, and Course proposals
5. Adjournment

Members and Administrators of the Graduate Council Curriculum Committee

Patricia Bockelman, Chair, College of Graduate Studies
Terrie Sypolt, Vice Chair, University Libraries
Elsie Olan, College of Community Innovation and Education
Andre Gesquiere, College of Sciences
Sonia Arellano, College of Arts and Humanities
Art Weeks, College of Engineering and Computer Science
Jihe (Jackie) Zhao, College of Medicine
Diane Andrews, College of Nursing
Axel Schülzgen, College of Optics and Photonics
Olga Molina, College of Health Professions and Sciences
Alex Rubenstein, College of Business Administration
Wei Wei, Rosen College of Hospitality Management
TBD, Graduate Student Association
Tosha Dupras, College of Sciences, Administrator
Joellen Edwards, College of Nursing, Administrator
Ali Gordon, College of Engineering and Computer Science, Administrator
David Hagan, College of Optics and Photonics, Administrator
Lynn Hepner, College of Arts and Humanities, Administrator
Devon Jensen, College of Graduate Studies, Administrator
Glenn Lambie, College of Community Innovation and Education, Administrator
Saleh Naser, College of Medicine, Administrator
Linda Rosa-Lugo, College of Health Professions and Sciences, Administrator
Sevil Sonmez, College of Business Administration, Administrator
Alan Fyall, Rosen College of Hospitality Management, Administrator

Graduate Council Curriculum Committee
October 9, 2019
2:30 p.m., HPA1 room 304

1. College of Engineering and Computer Science

College of Engineering and Computer Science Materials & Supplies fee revisions

1. Fee revision - CGS 5131 Computer Forensics I
    - Fee reduced by $10
2. Fee revision - CNT 6418 Computer Forensics II
    - Fee reduced by $10

2. College of Graduate Studies

College of Graduate Studies course revisions

1. IDS 6258 Electrochemical Energy Conversion and Storage
    - Revision to title and content (revised syllabus)
2. IDS 6260 Electrical and Optical Properties of Nanoscale Materials and Devices
    - Revision to title, course description, prerequisites, and content (revised syllabus)

College of Graduate Studies program revisions

1. Nanotechnology MS
    - Revision to elective course list
2. Nanotechnology MS, Non-Thesis Track
    - Revision to elective course list

3. College of Medicine

College of Medicine course additions

1. MDE 7495 Orthopedic Spine Surgery Elective
2. MDE 8095 Simulation in Medical Education Elective
3. MDE 8200 Elective in Ambulatory Internal Medicine
4. MDE 8248 Elective in Pulmonary Critical Care and Sleep Medicine
5. MDE 8348 Telemedicine Elective
6. MDE 8412 General Outpatient Pediatrics Clinic
7. MDE 8574 Introduction to Orthopaedic Surgery and Musculoskeletal Care
8. MDI 8459 Acting Internship in General Outpatient Pediatrics with Nursery
9. MDI 8550 Acting Internship in Clinical Ophthalmology

4. College of Optics and Photonics

College of Optics and Photonics program revisions

1. Graduate Program Revision - Optics and Photonics MS
    - Revision to allow students to substitute OSE 6536 Semiconductor Lasers for OSE 5525 Laser Engineering to satisfy core course requirements
2. Optics and Photonics MS, Photonics Track
    - Revision to allow students to substitute OSE 6536 Semiconductor Lasers for OSE 5525 Laser Engineering to satisfy core course requirements
3. Optics and Photonics PhD
    - Revision to allow students to substitute OSE 6536 Semiconductor Lasers for OSE 5525 Laser Engineering to satisfy core course requirements

College of Optics and Photonics course revision

1. OSE 6536 Semiconductor Lasers
    - Revision to prerequisites

GCCC Agenda 10-9-19

Committee	Graduate Curriculum Committee
Notes	
Total Proposals	19

College of Engineering and Computer Science Department of Computer Science - Fee revision - CGS 5131 Computer Forensics I

2020-2021 Graduate Materials and Supplies Fee

General Catalog Information

Policy

The BOG statute permitting Materials and Supplies Fees (M&S Fee) specifies that these fees are "to offset the cost of materials or supplies that are consumed in the course of the student's instructional activities, excluding the cost of equipment replacement, repairs, or maintenance." (1009.24 {14}{i})

Approval Process

To administer such materials and supplies fees that are approved by the faculty, the following policies are in effect. All requests for additions, changes, or deletions shall be submitted by the fall semester date of the year prior to which the fees intend to be implemented. The approval process is as follows:

Departments propose a new or modified fee. The Provost, at the recommendation of the Vice Provost for Teaching and Learning, is the approving authority. Originating departments proposing a new or reduction of an M&S Fee must complete the "Graduate Materials and Supplies Fee Request" Proposal through Curriculog, for routing through the following for approval. Authorities at each level may approve, reject, or refer to originator for corrections:

Department Chair
College Dean
Graduate Council Curriculum Committee (GCCC)
Dean of Graduate Studies

Provost

Each proposal for a new or increased M&S Fee must include the following:

- **A justification for the imposition of fee for students enrolled in the specified course**
- **Explanation of how expenditures will support student-learning outcomes.**
- **Evidence outlining efforts to obtain alternative funding from the department, college, external sources, and other allowed fees, whether successful or unsuccessful. If there are existing M&S Fees, explain why these are insufficient and why an M&S Fees is also needed.**
- **Detailed proposal budget information indicating consumable materials and/or supplies by category and line item.**

Proposals to terminate fees in their entirety require only a memo from the department and approval by the college dean to be considered by GCCC through Curriculog.

All fee changes will go into effect the Fall semester of the year for which the fee is approved.

- **The same fee will be charged for each semester: Fall, Spring, and Summer.**
- **Fees will be in effect until any change in the justification for the fee, initiating a request from the unit for an addition or subtraction from the fee.**
- **Notice of the Provost's approval of fee requests will be sent to the department, Registrar's Office, Student Accounts office and Division of Finance and Accounting.**
- **The College of Undergraduate Studies will maintain the listings of M&S Fees for undergraduate courses. The College of Graduate Studies will maintain for graduate courses.**

Accountability:

Department Level: **The department chair, or designated representative, for each department will produce a staggered five-year analysis report on each existing M&S Fee, including the original purposes of the fees, explanation of the extent to which they were used for these ends, beginning and ending cash balances, actual expenditures, plans for carry forward funds (if applicable), and consideration of future needs. The dean will provide these reports to the Vice Provost for Teaching and Learning no later than the first day of classes in the fall semester. Each dean will at that time forecast pending departmental proposals for new fees, increases or decreases in existing fees, or terminations.**

Course and Program Fee Review Committee (CPFRC): **The Vice Provost for Teaching and Learning will appoint and charge this committee, comprised of one department chair, one associate dean, the chair of the UPCC, the chair of the UCRC, the chair of GCCC, and a representative from UCF Finance and Accounting. The CPFRC will review all course and program fees and provide recommendations for continuation, modification, or termination. This committee should meet during the fall semester upon receipt of college reports from the previous fiscal year.**

University Audit: **Programs agree to submit to financial audits and advisory**

reviews of expenditures, as determined by the Division of Teaching and

Learning, with the college's responsibility to correct any inadmissible expenditures and to implement plans for spending of carry forward funds.

References

SUS, Florida, Board of Governors Regulation 7.003, "Fees, Fines, and Penalties," http://www.flbog.edu/board/regulations/regulations.php

Proposal Type (for agenda purposes)* Fee revision

Type of Request:

- [ ] Fee Addition (new fee)
- [ ] Fee Revision to Increase Fee
- [x] Fee Revision to Decrease Fee
- [ ] Fee Deletion
- [ ] Fee Continuation (same amount)

This form is to be used for request to add, revise, continue, or delete Materials and Supplies Fees (M&S Fees). All requests for the next graduate catalog must be submitted to Graduate Curriculum Committee. Approved fees become effective in the following Fall semester.

Request Routing: 1) Department Chair to College Dean's Office; 2) Dean's Office approval; 3) graduate committee reviews and College of Graduate Studies submits to Provost; 4) A list of approved requests will be forwarded to the Provost for final approval.

M&S Fees are associated with permanent, individual courses (not special topics). Florida statutes specify this fee is to "offset the cost of materials or supplies that are consumed in the course of the student's instructional activities, **excluding the cost of equipment replacement, repairs, and maintenance."** Thus, they must be used for expendable or consumable items that are above and beyond the normal M&S Fees used in classroom instruction (labor course supplies, Handouts, examination forms) and cannot be used for personnel services or equipment purchase/rental. Maximum amount is $70.00.

Date Submitted: 09/13/19

College / Department:* College of Engineering and Computer Science

Department of Computer Science

Course Prefix:* CGS

Course Number:* 5131

Course Title:* Computer Forensics I

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Course Title:* CGS 5131 Computer Forensics I

Fee Information

One course per form. Round fee to the nearest dollar.

Current Fee Per Student:	50	**Requested Fee Per Student:**	40
Estimated Annual Enrollment:	50	**Revenue from Enrollment:**	2000

Provide justification for the request:

The fee is used to pay for purchasing digital forensics software that supports class teaching and lab experiments by students. The cost will be shared between two classes, CGS 5131 (offered in every Fall semester) and CNT 6418 (offered in every Spring semester).

This request is to reduce the fee and to update the product description text that was submitted when the fee was originally approved. Have clicked the "attached Plan of Study" box in order to submit this request, but have not attached a file as this request is to reduce the fee. Please advise if additional info is needed.

Attach a Plan of Study for students in the program showing all fees to be charged to the student to complete the program. The Plan of Study must include all courses and the associated Materials and Supplies Fees and the current Equipment fee (if applicable). For a template, please visit the Graduate Council website at: https://graduatecouncil.ucf.edu/curriculum-committee/ then click on the link for Fee Request- Sample Plan of Study.

Provide detailed cost information (per student) about the expenses for which the fee is to be assessed.

Number of Units	1	**Estimated Cost**	40

Description License to use the digital forensics software for one semester.

Number of Units		**Estimated Cost**	

Description

Number of Units		**Estimated Cost**	

Description

Number of Units	Estimated Cost

Description

Number of Units	Estimated Cost

Description

Total Cost of Items Per Student:	40

Payment Details

Account Number to Deposit Fees:	16400803
Item Type:	
Contact Person:	Maureen Landgraf
Phone Number:	407-823-5310

Attachments

Attached*	☑ I have attached a Plan of Study showing all program fees.

Administrative use only

Catalog Course Description	.

UCF | College of Graduate Studies

Graduate Materials and Supplies Fee Request Form

☐ Course Addition ☒ Course Revision

Forward to your college office.

This form is to be used for requests to add, increase, or delete materials and supplies fees. All requests for the next graduate catalog must be submitted by October 26 for the November 9 agenda of the Graduate Council Curriculum Committee.

Request Routing: 1) Department Chair to College Dean's Office; 2) Dean's Office approved and enters data in online Course Action data base; 3) Graduate or Undergraduate committees review and Graduate or Undergraduate Dean submits to Provost; 4) A list of approved requests will be forwarded to the Provost for final approval.

Materials and supplies fees must be used for expendable or consumable items that are above and beyond the normal materials and supplies used in classroom instruction (lab, clinical, studio supplies) and cannot be used for personnel services or equipment purchase/ rental. Maximum amount is $70.00.

- Materials and supplies that are specialized and not readily available or materials and supplies that would save students money by bulk purchasing are legitimate uses of these fees.
- All materials and supplies fees must be spent on only the items listed on the table below. All materials and supplies fees for graduate courses must be approved by the Graduate Council; any previous materials and supplies fees being levied but not approved by the Graduate Council should be brought forward to document how the fees are being used.
- All materials and supplies fees should be reviewed periodically.

Date Submitted: August 22, 2019 **College:** Engineering and Computer Science

Department: Computer Science

Course Prefix and Number: CGS 5131 **Course Title:** Computer Forensics I

Fees:
One course per form. Round fee to the nearest dollar.

Current Fee Per Student: $50 **Requested Fee Per Student:** $40

Estimated Annual Enrollment: 50 **Revenue from Enrollment:** $2000

Provide justification for the request:

The requested fee will be used to pay for purchasing digital forensics software that will be used to support the class teaching and lab experiments by students. The cost will be shared between two classes, CGS5131 (offered in every Fall semester) and CNT6418 (offered in every Spring semester).

Provide detailed cost information (per student) about the expenses for which the fee is to be assessed.

No. of Units	Description	Estimated Cost
1	license to use the digital forensics software purchased via the M&S fee for one semester	$40
	Total Cost of Items Per Student:	$40

Payment Details

Account Number to Deposit Fees: 16400803

Item Type:

Contact Person: Maureen Landgraf

Phone Number: 407-823-5310

Approval Signatures

Department Chair / Director:

Print: Gary J. Leavens **Signature:** Gary J. Leavens **Date:** 8/22/13

College Academic Standards:

Print: Ann P. Gordon **Signature:** Ann P. Gordon **Date:** 8/30/13

College Dean:

Print: Charles H. Reilly **Signature:** Charles H. Reilly **Date:** 9/4/13

Graduate Council:

Print: **Signature:** **Date:**

Vice President for Research and Dean of the College of Graduate Studies:

Print: **Signature:** **Date:**

Deborah Williams

From: Charles Reilly
Sent: Tuesday, September 10, 2019 5:46 AM
To: Michael Georgiopoulos
Cc: Deborah Williams
Subject: RE: Acting Dean

Hi Michael,

Sure, I can serve as Acting Dean in your absence.

Have a safe trip,
Chuck

From: Michael Georgiopoulos <michaelg@ucf.edu>
Sent: Monday, September 9, 2019 8:15 PM
To: Charles Reilly <reilly@ucf.edu>
Cc: Michael Georgiopoulos <michaelg@ucf.edu>; Deborah Williams <Deborah.Williams@ucf.edu>
Subject: Acting Dean

Chuck,

I am going to be out of town from September 11 to September 14, 2019 (NSF 3rd year review). Could you please serve as an Acting dean for the College.

Regards,

Michael

College of Engineering and Computer Science Department of Computer Science - Fee revision - CNT 6418 Computer Forensics II

2020-2021 Graduate Materials and Supplies Fee

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- **College Dean**
- **Graduate Council Curriculum Committee (GCCC)**
- **Dean of Graduate Studies**
- **Provost**

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University Audit: Programs agree to submit to financial audits and advisory reviews of expenditures, as determined by the Division of Teaching and Learning, with the college's responsibility to correct any inadmissible expenditures and to implement plans for spending of carry forward funds.

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Proposal Type (for agenda purposes) *	Fee revision

Type of Request:	☐ Fee Addition (new fee)
	☐ Fee Revision to Increase Fee

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Date Submitted: 09/13/2019

College / Department:* College of Engineering and Computer Science; Department of Computer Science

Course Prefix:* CNT

Course Number:* 6418

Course Title:* Computer Forensics II

For the Full Title box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Course Title:* CNT 6418 Computer Forensics II

Fee Information

One course per form. Round fee to the nearest dollar.

Current Fee Per Student: 50

Requested Fee Per Student: 40

Estimated Annual Enrollment: 50

Revenue from Enrollment: 2000

Provide justification for the request: The fee is used to pay for purchasing digital forensics software that supports class teaching and lab experiments by students. The cost will be shared between two classes, CGS 5131 (offered in every Fall semester) and CNT 6418 (offered in every Spring semester)

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Provide detailed cost information (per student) about the expenses for which the fee is to be assessed.

Number of Units	1	**Estimated Cost**	40
Description	License to use the digital forensics sofware for one semester.		
Number of Units		**Estimated Cost**	
Description			
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Description			
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Item Type:	
Contact Person:	Maureen Landgraf
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UCF | College of Graduate Studies

Graduate Materials and Supplies Fee Request Form

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Date Submitted: August 22, 2019 **College:** Engineering and Computer Science

Department: Computer Science

Course Prefix and Number: CNT 6418 **Course Title:** Computer Forensics II

Fees:
One course per form. Round fee to the nearest dollar.

Current Fee Per Student: $50 **Requested Fee Per Student:** $40

Estimated Annual Enrollment: 50 **Revenue from Enrollment:** $2000

Provide justification for the request:

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Item Type:

Contact Person: Maureen Landgraf

Phone Number: 407-823-5310

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Department Chair / Director:

Print: Gary T. Leavens **Signature:** [signature] **Date:** 8/22/15

College Academic Standards:

Print: Ali P. Gordon **Signature:** [signature] **Date:** 8/30/19

College Dean:

Print: Charles H. Reilly **Signature:** [signature] **Date:** 9/4/19

Graduate Council:

Print: **Signature:** **Date:**

Vice President for Research and Dean of the College of Graduate Studies:

Print: **Signature:** **Date:**

Deborah Williams

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Sent: Tuesday, September 10, 2019 5:46 AM
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Cc: Deborah Williams
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Subject: Acting Dean

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Regards,

Michael

College of Graduate Studies - Grad Course Revision - IDS 6258 Electrochemical Energy Conversion and Storage

2020-2021 Graduate Course Revision

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. Changes will only be tracked after the proposal is launched.

Course revisions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Proposal Type:*	Grad Course Revision
College:*	College of Graduate Studies
Unit / Department / College:*	NanoScience Technology Center

IMPORT COURSE NOW! Please use the Import feature to import the course information from the Catalog by clicking in the top left corner of the form. Do not type the course prefix and code.

Prefix:* IDS	**Code:*** 6258
Course Title:*	~~Advanced Materials~~ **Electrochemical Energy Conversion** and ~~Nanotechnology for Rechargeable Batteries~~ **Storage**
30 Character Abbreviation:*	Electrochem Enger Conv Storage
Full Title:*	IDS 6258 Electrochemical Energy Conversion and Storage

Course Instructor (Must be Approved Graduate Faculty/Scholars):	Yang Yang

Department Chair Phone Number:*	407-882-2847	**Dept Chair Email***	lzhai@ucf.edu

Complete the remaining required fields and LAUNCH this proposal by clicking in the top left corner! Do not begin revisions until **after** launch. Course revisions before launch will not be tracked.

Course Description:*	Build a bridge between nanomaterials and electrochemical energy storage performance and demonstrate renewable energy storage on the nanoscale.
Prerequisite(s):	Admission to the PSM in Nanotechnology and IDS 6250 , or C.I.
Corequisite(s):	
Does this proposal include revisions to prerequisites?*	○ Yes ◉ No
Grading Scheme:	ABCDF

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	1	1	1
(Formal) Instruction Time - Class Hours or Online Module, etc.	1	1	1
Lab/Studio/Field work	0	1	2
Out-of-Class (homework, course readings, group work, online posts, etc)	2	1	0
Total Course Engagement	3	3	3

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	3
Instruction Time:*	3
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	6
Total Engagement Hours:*	9

NOTE: For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated. Also indicate who approves content before a course is repeated.

Repeat for credit?	○ Yes ◉ No
If yes, indicate the degree program name and the total times the course may repeated.	

If the course you are revising is a split-level class, please note this revision form will only impact the graduate side of the course. The undergraduate component of the course should be revised through the Undergraduate Curriculum Committee. As a reminder, the graduate syllabus should clearly demonstrate more advanced subject matter, expectations, and rigor.

Split-Level Class:*	○ Yes ◉ No
List undergraduate split-level course:	

Term of Offering

When will the course be offered?	☐ Odd Fall ☐ Even Fall ☑ Odd Spring ☑ Even Spring ☐ Odd Summer ☐ Even Summer ☐ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:	○ Required Course ◉ Elective Course

Justification for Course Revision

What is the rationale for revising this course?*	To accommodate updated course materails. Revised course title & syllabus.
What grad programs/tracks require or recommend this course for graduation?	Nanotechnology MS, Nanotechnology MS Non-Thesis Track
If not a major requirement, what will be the source of students?	
What is the estimated annual enrollment?	15

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail discussion you have had.

Detail Discussion	This is a minor modification of an existing course.

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with**

actions to take in various types of emergencies

Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check	☑ I have completed all relevant parts of the form.
Attached	☑ I have attached a course syllabus and rationale.

Administration Use Only

Catalog Ownership:	Interdisciplinary Studies
Course OID	
Course Type	Interdisciplinary Studies
Status	◉ Active-Visible ○ Inactive-Hidden

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	046214

Electrochemical Energy Conversion and Storage

NanoScience Technology Center
University of Central Florida

COURSE SYLLABUS

Instructor:	Instructors: Yang Yang	Term: Fall 2019
Office:	Office Number: 423	Class Meeting Days: TBD
Phone:	Phone for Office: 407-823-2845	Class Meeting Hours: TBD
E-Mail:	Instructors' Email: Yang.Yang@ucf.edu;	Class Location: TBD
Office Hours:	Date and time: TBD	

Welcome

Welcome to course: Electrochemical Energy Conversion and Storage

University Course Catalog Description:

Course Overview

Renewable energy generation and storage in electrochemical systems are the dominant solutions to energy and environmental crisis. This course deals with various topics in nanotechnology, material science and electrochemistry in relation to renewable energy generation and storage. Different electrochemical systems and their applications in renewable energy generation and storage will be covered. Future directions to enhance the performance of the systems through nanoengineering will also be discussed.

Course Objectives

Upon completion of the course, students will be able to demonstrate in-depth knowledge and understanding of how nanotechnology and materials engineering can contribute to a sustainable energy future. The students will also learn the device fabrication and electrochemical performance characterization of different renewable energy systems.

Topics Covered

- Category of renewable energy generation system (basic principles)

- Advances in electrode materials for renewable energy generation (design, fabrication, and characterization)
- Category of the renewable energy storage system (basic principles)
- Advances in electrode materials for renewable energy storage (design, fabrication, and characterization)
- Develop novel materials through nanoengineering (design, fabrication, and characterization)

Course Prerequisites

Consent of instructor

Course Credits

3 (3, 0)

Required Texts and Materials

No prescribed text book

Supplementary (Optional) Texts and Materials

Will be provided during the course

Basis for Final Grade

Provide a listing of assessments and their weighting in the semester total. In addition to (or even in lieu of) tests, consider exploring “authentic” assessments, which are based as closely as possible to real world experiences.

Assessment	Percent of Final Grade
Assignments	30%
Seminar presentations	40%
Midterm Exam	30%

X. Grading scale:

Grading Scale (%)	
90-100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

Course Policies: Grades

Late Work Policy:
There are no make-ups for the assignments or the final exam.

Extra Credit Policy: No extra credit and curving will be offered.

Grades of "Incomplete":
The current university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. The instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

Course Policies: Technology and Media

Email: Please use email for all important correspondence.

Classroom Devices: No electronic devices except calculators are allowed to use in the classroom. No recording of the lecture is permitted.

Course Policies: Student Expectations

Disability Access: The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. Students with disabilities who need accommodations in this course must contact the professor at the beginning of the semester to discuss needed accommodations. No accommodations will be provided until the student has met with the professor to request accommodations. Students who need accommodations must be registered with Student Disability Services, Student Resource Center Room 132, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.

Attendance Policy:
- Regular class attendance is strongly advised and is necessary for students to understand many of the topics covered.
- Students must be on time for class.
- If missed a class, it is the responsibility of the student to find out the materials covered.

Professionalism Policy:
Per university policy and classroom etiquette; mobile phones, iPods, *etc*. **must be silenced** during all classroom lectures. Those not heeding this rule will be asked to leave the classroom/lab immediately so as to not disrupt the learning environment. Please arrive on time for all class meetings. Students who habitually disturb the class by talking, arriving late, *etc*., and have been warned may suffer a reduction in their final class grade.

Academic Conduct Policy:
Academic dishonesty in any form will not be tolerated. As in all University courses, The Golden Rule Rules of Conduct will be applied. Violations of these rules will result in a record of the infraction being placed in your file and receiving a zero on the work in question AT A MINIMUM. At the instructor's discretion, you may also receive a failing grade for the course. Confirmation of such incidents can also result in expulsion from the University

Schedule

08/21-12/01

* Note: The Schedule is subject to revision

Essay: A comprehensive (minimum of 4000 words) overview of rechargeable batteries related nanotechnology topic of interest involving a basic foundation of nanoscience and materials engineering with commercial potential.

Presentation: Individual presentation of a peer-reviewed scientific research article of interest. Total presentation time: 15 minutes

Week	
1	Introduction of the course, the category of renewable energy systems and an overview of nanotechnology and advanced materials in renewable energy
2	Fundamental of water splitting
3	Advances and nanotechnology in water splitting
4	Group presentation
5	Fundamental of electrocatalytic energy generation
6	Advances and nanotechnology in electrocatalytic energy generation
7	Group presentation
8	Mid-term exam
9	Fundamental of supercapacitors
10	Advances and nanotechnology in supercapacitors
11	Group presentation
12	Fundamental of Li-ion batteries
13	Advances and nanotechnology in Li-ion batteries
14	Group presentation
15	Overview of the course

College of Graduate Studies - Grad Course Revision - IDS 6260 Electrical and Optical Properties of Nanoscale Materials and Devices

2020-2021 Graduate Course Revision

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. **Changes will only be tracked after the proposal is launched.**

Course revisions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Proposal Type:* Grad Course Revision

College:* College of Graduate Studies

Unit / Department / College:* NanoScience Technology Center

IMPORT COURSE NOW! Please use the Import feature to import the course information from the Catalog by clicking in the top left corner of the form. Do **not** type the course prefix and code.

Prefix:* IDS

Code:* 6260

Course Title:* **Electrical and Optical** Properties of ~~**Materials at**~~ Nanoscale **Materials and Devices**

30 Character Abbreviation:* Prop Nano Materials

Full Title:* IDS 6260 Electrical and Optical Properties of Nanoscale Materials and Devices

Course Instructor (Must be Approved Graduate Faculty/Scholars): Dr. Yajie Dong, Dr. Saiful Khondaker, Dr. Arkadiy Lyakh, Dr. Tania Roy, Dr. Yeonwoong Jung

Department Chair Phone Number:* 407-882-2847

Dept Chair Email* lzhai@ucf.edu

Complete the remaining required fields and LAUNCH this proposal by clicking in the top left corner! Do not begin revisions until **after** launch. Course revisions before launch will not be tracked.

Course Description:* ~~**Aims to integrate multidisciplinary approaches covering materials science**~~ **Multiple topics on electrical** and ~~**nanosciences to understand how intrinsic**~~ **optical** properties of **nanoscale** materials ~~**are governed**~~ **and devices, including** ~~**size-dependent**~~ **size-dependent change in material properties, structural understanding** by **atomic-to-nanoscale characterizations, fabrication of nanoscale devices and** their ~~**structural variations at nanoscales**~~ **electrical properties, luminescent properties and applications**.

Prerequisite(s): ~~**Admission to the PSM or MS in Nanotechnology**~~ **IDS 6250** or C. I.

Corequisite(s):

Does this proposal include revisions to prerequisites?* (•) Yes ( ) No

Grading Scheme: ABCDF

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	1	1	1
(Formal) Instruction Time - Class Hours or Online Module, etc.	1	1	1
Lab/Studio/Field work	0	1	2
Out-of-Class (homework, course readings, group work, online posts, etc)	2	1	0
Total Course Engagement	3	3	3

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	3
Instruction Time:*	~~3~~ **2. 5**
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	6.5
Total Engagement Hours:*	9

NOTE: For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated. Also indicate who approves content before a course is repeated.

Repeat for credit?

Activity Log

Emily Stettner

\+ **No**

○ Yes ◉ No

If yes, indicate the degree program name and the total times the course may repeated.

If the course you are revising is a split-level class, please note this revision form will only impact the graduate side of the course. The undergraduate component of the course should be revised through the Undergraduate Curriculum Committee. As a reminder, the graduate syllabus should clearly demonstrate more advanced subject matter, expectations, and rigor.

Split-Level Class:* ○ Yes ◉ No

List undergraduate split-level course:

Term of Offering

When will the course be offered?

Activity Log

Emily Stettner

+ **Odd Spring**

+ **Even Spring**

☐ Odd Fall ☐ Even Fall ☑ Odd Spring ☑ Even Spring ☐ Odd Summer
☐ Even Summer ☐ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:

Activity Log

Emily Stettner

+ **Elective Course**

○ Required Course ◉ Elective Course

Justification for Course Revision

What is the rationale for revising this course?*

This is now a team taught course with several instructors. The course materials has also been updated (new syllabus is atatched). To reflect better on the course materials, the title has been modified.

What grad programs/tracks require or recommend this course for graduation?

Nanotechnology MS, Nanotechnology MS Non-Thesis track

If not a major requirement, what will be the source of students?

What is the estimated annual enrollment?

20

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail discussion you have had.

Detail Discussion

Course Syllabus Policy

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and other accrediting bodies.

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Course Syllabus Policy* ☑ I have aligned this syllabus per the UCF syllabus policy.

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Check

Activity Log

Emily Stettner

\+ I have completed all relevant parts of the form.

☑ I have completed all relevant parts of the form.

Attached

Activity Log

Emily Stettner

\+ I have attached a course syllabus and rationale.

☑ I have attached a course syllabus and rationale.

Administration Use Only

Catalog Ownership: Interdisciplinary Studies

Course OID	
Course Type	Interdisciplinary Studies
Status	(•) Active-Visible ( ) Inactive-Hidden

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	046413

IDS 6260 Electrical and Optical Properties of Nanoscale Materials and Devices

NanoScience Technology Center

College of Graduate Studies, University of Central Florida

COURSE SYLLABUS

Instructor:	Dr. Yajie Dong, Dr. Saiful Khondaker, Dr. Arkadiy Lyakh, Dr. Tania Roy, Dr. Yeonwoong Jung	Term:	Fall 2019
Office:	NanoScience Technology Center Suite 475	Class Meeting Days:	Monday
Phone:	407-823-5159 (Dong), 407-864-5054 (Khondaker), 407-882-2845 (Lyakh), 407-823-2938 (Roy), 407-823-1033 (Jung)	Class Meeting Hours:	5:30PM - 7:50PM
E-Mail:	Yajie.Dong@ucf.edu, Saiful@ucf.edu, arkadiy.lyakh@ucf.edu, Tania.Roy@ucf.edu, yeonwoong.jung@ucf.edu	Class Location:	NSTC 475
Website:	Nano.ucf.edu	Lab Location:	N/A
Office Hours:	TBD		

I. Welcome!

II. University Course Catalog Description

This course aims to cover multiple topics on Electrical and optical properties of nanoscale materials and devices, including those covered previously in the following courses: “Basic Properties of Materials at Nanoscale; Advanced Energy-Efficient Nanoelectronic Devices; Luminescent Materials, Physics of NanoElectronic Devices and Devices and Low Dimensional Semiconductor Devices”.

III. Course Overview

Materials whose sizes are reduced down to nanoscales often exhibit extraordinary electrical or optical properties which are unattainable in their bulk counterparts or any other traditional materials. This unique ‘nano-size effect’ has been the rule-of-thumb to drive the development of various nanomaterials with great potential to revolutionize modern electronics, photonics and/or optoelectronics technologies. This course will aim to 1) understand the fundamental concepts for the relationship of

crystalline structure vs. material properties at nanoscales from materials science's perspective. Covered topics include size-dependent change in material properties (e.g., physical, chemical, electrical, and optical) in emerging low-dimensional (0D, 1D, and 2D) materials, structural understanding by atomic-to-nanoscale characterizations (e.g, ex-situ and in-situ electron microscopy) and practical applications of these properties (e.g., electronics, energy, and sensing). (Eric) 2) In today's electronics, the universal switch – the transistor – is thermally activated, and requires a high voltage >> kT/q ~ 1 V to achieve a good ON/OFF ratio. In this course we will analyze the opportunity to make major reductions in the power consumption of nanoelectronic devices. Some anticipated technical options would be evaluated. The Student presentations on the latest advancements in the field will augment the understanding of the subject. (Tania) 3) introduce to the students about fabrication techniques of nanoscale electronic devices and understanding of their charge transport properties. (Saiful) 4) Low dimensional semiconductor devices are a hot topic in fundamental research with numerous applications. The course starts with relevant fundamental concepts and then transitions to device modeling using either approximate methods or numerical simulations. Numerous practical examples are given throughout the course. (Arkadiy) 5) The course will also cover both fundamental and applied topics of luminescent materials and devices for display, lighting or other novel applications. (Yajie)

IV. Course Objectives

The main goal of this course is to ensure that students will learn the fundamental principles as well as practical applications of nanomaterials. After completion of the course, students will 1) gain an in-depth knowledge and understanding of why materials behave differently as their dimensions change and how this size-dependency can be applied to tackle real-word problems. Students will also have knowledge on the design and fabrication of various nanomaterials as well as state-of-the art experimental techniques, which are of fundamental importance both in modern materials science and nanotechnologies. (Eric) 2) gain deep insight into the functioning of nanoelectronic devices. Students will be able to comprehend the demands of modern technology and have an overview of the various paradigm shifts in the design of nano-electronic devices to meet today's challenges. They will also get a strong idea on experimental methods being used today, apart from a thorough theoretical perspective. (Tania) 3) will be well prepared to create and characterize improved materials, devices, and systems at the nanoscale that exploit these new properties. (Saiful) 4) learn the fundamental principles and modeling techniques for low dimensional semiconductor devices. At the end of the course, they will understand how size quantization changes low dimensional devices properties and they will be able to quantitatively predict their characteristics. (Arkadiy) 5) will be able to understand the history, current state of the art and challenges associated with Luminescent Materials and Devices. (Yajie).

V. Course Prerequisites

1) Acceptance in the NanoScience Technology Center Professional Science Masters (PSM) or Masters (MS) program, or 2) Consent of Instructor. Proficiency in the following area will be helpful:

- Calculus
- Physics (mechanics, thermodynamics, quantum physics)

VI. Course Credits

3 credit hours

VII. Required Texts and Materials

There is no required textbook for the course, however. A bibliography of recommended resources will be provided as well as photocopies and handouts throughout the course.

VIII. Supplementary (Optional) Texts and Materials

1) Physics of Semiconductor Devices, by S. M. Sze. ISBN 0-471-05661-8
2) Introduction to Nanoelectronics, by Vladimir Mitin, Viatcheslav, Kochelap, Michael Stroscio. ISBN: 978-0521881722
3) Advanced Semiconductor Fundamentals, Second Edition, Volume VI, Robert F Pierret, ISBN 0-13-061792-X
4) Quantum Wells, Wired and Dots, third edition by Paul Harrison (ISBN 978-0-470-77097-9)
5) Luminescent materials by G. Blasse, B. C. Grabmaier, Springer-Verlag, 1994.
6) Phosphor Handbook, by Shigeo Shionoya, William M. Yen, Hajime Yamamoto, December 1, 2006 by CRC Press, ISBN 9780849335648 - CAT# 3564.
7) OLED Fundamentals: Materials, Devices, and Processing of Organic Light-Emitting Diodes by Daniel J. Gaspar, Evgueni Polikarpov, December 1, 2017 Forthcoming by CRC Press, ISBN 9781138893962 - CAT# K32853

IX. Basis for Final Grade

The listing of assessments and their weighting in the semester will be as follows.

Assessment	Points
Midterm exam	100
Final presentation	100
Final exam	100
Total points	300

The following grading scale will apply:

Grading Scale (%)	
245-400	A
205-244	A-
170-204	B
130-169	C
100-130	D
<100	F

X. Grade Dissemination

Graded tests and materials in this course will be returned individually only by request. You can access your scores at any time using "myUCF Grades" in the portal. Please note that scores returned mid-semester are unofficial grades. If you need help accessing myUCF Grades, see the online tutorial: https://myucfgrades.ucf.edu/help/.

XI. Course Policies: Grades

Late Work Policy: There are no make-ups for in-class presentations, quizzes, the midterm, or the final exam.

Grades of "Incomplete: The current university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. Your instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the "I" will automatically be recorded as an "F" on your transcript.

XII. Course Policies: Technology and Media

Email: For general inquiries, students should contact Dr. Dong or Dr. Khondaker by email (Yajie.Dong@ucf.edu, Saiful@ucf.edu) or during office hours. For questions specific to the content of the class, students should direct their question to the appropriate instructor: Dr. Dong or Dr. Khondaker by email (Yajie.Dong@ucf.edu, Saiful@ucf.edu). Students should expect a response within 24 hours throughout the week.

XIII. Course Policies: Student Expectations

Attendance Policy: Class attendance is required in this course.

Professionalism Policy: Per university policy and classroom etiquette; mobile phones, iPods, *etc*. **must be silenced** during all classroom and lab lectures. Those not heeding this rule will be asked to leave the classroom/lab immediately so as to not disrupt the learning environment. Please arrive on time for all class meetings. Students who habitually disturb the class by talking, arriving late, *etc*., and have been warned may suffer a reduction in their final class grade.

Academic Integrity:
Students should familiarize themselves with UCF's Rules of Conduct at <http://osc.sdes.ucf.edu/process/roc>. According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.
2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.
3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.
4. Falsifying or misrepresenting the student's own academic work.
5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.
7. Helping another violate academic behavior standards.

For more information about Academic Integrity, consult the International Center for Academic Integrity <http://academicintegrity.org>.
For more information about plagiarism and misuse of sources, see "Defining and Avoiding Plagiarism: The WPA Statement on Best Practices" <http://wpacouncil.org/node/9>.
Responses to Academic Dishonesty, Plagiarism, or Cheating
Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, *The Golden Rule* <http://goldenrule.sdes.ucf.edu/docs/goldenrule.pdf>. UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and when necessary respond to academic misconduct. Penalties can include a failing grade in an assignment or in the course, suspension or expulsion from the university, and/or a "Z Designation" on a student's official transcript

indicating academic dishonesty, where the final grade for this course will be preceded by the letter Z. For more information about the Z Designation, see <http://goldenrule.sdes.ucf.edu/zgrade>.

University Writing Center: The University Writing Center (UWC) is a free resource for UCF undergraduates and graduates. At the UWC, a trained writing consultant will work individually with you on anything you're writing (in or out of class), at any point in the writing process from brainstorming to editing. Appointments are recommended, but not required. For more information or to make an appointment, visit the UWC website at http://www.uwc.ucf.edu, stop by MOD 608, or call 407.823.2197.

Course Accessibility

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. This syllabus is available in alternate formats upon request. Students with disabilities who need specific access in this course, such as accommodations, should contact the professor as soon as possible to discuss various access options. Students should also connect with Student Accessibility Services (Ferrell Commons, 7F, Room 185, sas@ucf.edu, phone (407) 823-2371). Through Student Accessibility Services, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential access and accommodations that might be reasonable.

Campus Safety

Emergencies on campus are rare, but if one should arise in our class, we will all need to work together. Everyone should be aware of the surroundings and familiar with some basic safety and security concepts.

- In case of an emergency, dial 911 for assistance.
- Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Please make a note of the guide's physical location and consider reviewing the online version at http://emergency.ucf.edu/emergency_guide.html.
- Familiarize yourself with evacuation routes from each of your classrooms and have a plan for finding safety in case of an emergency. (Insert class-specific details if appropriate)
- If there is a medical emergency during class, we may need to access a first aid kit or AED (Automated External Defibrillator). To learn where those items are located in this building, see http://www.ehs.ucf.edu/AEDlocations-UCF (click on link from menu on left). (insert class specific information if appropriate)
- To stay informed about emergency situations, sign up to receive UCF text alerts by going to my.ucf.edu and logging in. Click on "Student Self Service" located on the left side of the screen in the tool bar, scroll down to the blue "Personal Information" heading on your Student Center screen, click on "UCF Alert", fill out the information, including your e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."
- If you have a special need related to emergency situations, please speak with me during office hours.
- Consider viewing this video (https://youtu.be/NIKYajEx4pk) about how to manage an active shooter situation on campus or elsewhere.

Deployed Active Duty Military Students

If you are a deployed active duty military student and feel that you may need a special accommodation due to that unique status, please contact your instructor to discuss your circumstances.

Tentative Course Schedule (total 15 weeks)

- Note: The Schedule is subject to revision
- Oral presentation: Individual 15-minute presentation of a peer-reviewed scientific research article of interest.

IDS 6260 Course Schedule

Date	Instructor	
Week 1 (Aug 26)	Dr. Yeonwoong (Eric) Jung	○ Overview ▪ Introduction of instructors and their research activities ▪ Introduction of course structure; lectures, exams, and lab sessions ○ Nano-size effects on materials properties ▪ Size-dependent electrical, chemical, optical, physical properties; examples ▪ Basic understanding on the principles for nano-size dependency. ○ Understanding the physical structures of materials ▪ Crystalline, poly-crystalline, amorphous, and defects
Week 2 (Sept 2)		Labor Day, no-class
Week 3 (Sept 9)		○ Understanding the physical structures of materials – continued ▪ Role of surfaces on governing material properties at nanoscales ○ Understanding the electronic structures of materials ▪ Bandgap energy, types of materials - metal, insulator, semiconductor. Doping. ▪ Temperature dependent carrier transports
Week 4 (Sept 16)	Dr. Tania Roy	• Concept of effective mas, density of states • Drift, diffusion • P-N junctions o Electrostatics o qualitative analysis
Week 5 (Sept 23)		• Metal/semiconductor junctions • Recombination/generation concept • Brief overview of devices based on p-n junctions • Brief overview of transistors
Week 6 (Sept 30)	Dr. Saiful Khondaker	Carbon Nanotube (CNT): synthesis, properties and applications - Carbon nanotube – potential for future technology - Band structure and properties - Growth mechanisms - CNT based transistors: fabrication, transport, and applications - Low temperature properties
Week 7 (Oct 7)		Graphene and 2D materials a. Graphene band structure and unique properties b. Synthesis strategies of graphene c. Electrical transport properties of graphene devices and applications d. Reduced graphene oxide: properties and applications e. Other 2D materials: properties and applications
Week 8 (Oct 14)	Dr. Saiful Khondaker	Mid-term exam

Week 9 (Oct 21)	Dr. Yajie Dong	Luminescent Materials (Lamp Phosphors, X-ray Scintillators, Organic Emitters, Compound Semiconductors, Colloidal and Epitaxial Quantum Dots, Metal Halide Perovskites)
Week 10 (Oct 28)		Luminescent Devices (Photoluminescence based devices (Down conversion, Up conversion, Electroluminescence based devices (LED, OLED, QLED, Laser, High-Field Electroluminescence), Display, lighting, medical imaging applications.
Week 11 (Nov 4) **(starting at 6pm)**	Dr. Arkadiy Lyakh	Basics of bandgap engineering. Qualitative description of electron transport in multilayered semiconductor structures.
Week 12 (Nov 11)		Veterans Day, no-class
Week 13 (Nov 18) **(starting at 6pm)**		Efficient infrared semiconductor devices: quantum cascade lasers and quantum well infrared photodetectors.
Week 14 (Nov 25)	Dr. Tania Roy	Students' final Presentations 1
Week 15 (Dec 2)	Dr. Yajie Dong	Students' final Presentations 2
Week 16	Dr. Yeonwoong (Eric) Jung	Final exam

College of Graduate Studies - Graduate Program Revision - Nanotechnology MS

2020-2021 Graduate Program Revision/Reactivation

General Catalog Information

This form is to be used to REVISE graduate degree programs, tracks, or certificate programs. If there are tracks being revised or added to a program, one form must be submitted for EACH program and the track(s).

Please refer to the Graduate Council Curriculum Meeting Schedule for submission deadlines.

Select *Program* below.

Program Type:* (•) Program
( ) Shared Core

Proposal Type:* Graduate Program Revision

Read before you begin

TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

IMPORT curriculum data from the Catalog by clicking in the top left corner.
FILL IN all fields required marked with an * after importing data. You will not be able to launch the proposal without completing required fields.

LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. Changes will only be tracked after proposal is launched.

College:* College of Graduate Studies

Unit / Department / College:* NanoScience Technology Center

Unit(s) Housing Program: NanoScience Technology Center

Type of Action:* ☑ Program

☐ Track

☐ Certificate

IMPORT PROGRAM NOW! Please use the Import feature to import the program information from the Catalog by clicking in the top left corner of the form.

Name of program, track and / or certificate:*	Nanotechnology MS
Are you revising the name of the program, track, or certificate?*	○ Yes ◉ No
Proposed Effective Term / Year:*	Fall 2020
If you will be submitting other revision forms for tracks or course actions, please list them here:	Nanotechnology MS - non thesis track
Is the CIP code being updated?	☐ Yes ☑ No
If yes, please provide the new CIP code:	
Rationale for revision:	Update course listings

Complete the remaining required fields and LAUNCH this proposal! Do not begin revisions until **after** launch. Program revisions before launch will not be tracked.

Informational Description Chart- this will import.*

College: Graduate Studies	**Degree:** MS
Department: NanoScience Technology Center	**Option:** Thesis
Program Websites: http://nano.ucf.edu	
Graduate Program Handbook	

Revise catalog copy here! After you revise courses, click on the Curriculum Schema button below to revise the catalog copy. Please note: this information is what will flow directly to the graduate catalog. Any attached documents to this proposal will not be used for catalog purposes.

Follow these steps to propose courses to the revised program curriculum:

Step 1

There are two options for adding courses: "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculog Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.

Step 2

Click on "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 1. Select the courses you wish to add. For removing courses click on the and proceed.

Prospective Curriculum*	

Impact on Current Students

Will students be moved from an existing program, track, or certificate into this revised program, track, or certificate?*	○ Yes ◉ No
If yes, state the name of the program or track where students are currently enrolled and attach a list of students if possible:	
Will students have the option to stay in their existing program, track, or certificate?*	◉ Yes ○ No
If yes, how will current students be impacted by this change?	No impact on current student

Future Students

Provide a statement of who is likely to enroll and why. Please state if there is licensure or certification that	No impact on future students

depends upon this education, etc.	

Year 1

Headcount:	**SCHs:**

Year 2

Headcount:	**SCHs:**

Year 3

Headcount:	**SCHs:**

Indicate likely career or student outcomes upon completion:	No changes

Please complete the following section on financial support:

(Specify all forms of support – assistantships, fellowships, and tuition remission.)

Year 1

Number of assistantship students:	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Year 2

Number of assistantship students	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Year 3

Number of assistantship students:	**Source of funds:**
Number of fellowship	

students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Attachments

Please attach the required files by navigating to the Proposal Toolbox and clicking in the top right corner of the form.

Faculty List*	○ Attached ◉ Not Applicable
Support from involved units that no duplication exists*	○ Attached ◉ Not Applicable

Administration Use Only

Catalog Ownership:	NanoScience Technology Center
Program OID	7779
Program Type	Master
Degree Type	Master of Science
Status*	◉ Active-Visible ○ Inactive-Hidden

College of Graduate Studies - Graduate Program Revision - Nanotechnology MS

Program Description

The Master of Science in Nanotechnology program provides students with scientific knowledge and research training in nanoscience and nanotechnology. The program prepares students for seeking employment in industry and academia involved in nanotechnology research, product development and commercialization, or to pursue advanced PhD degrees in related areas.

The Nanotechnology MS program consists of 30 credit hours of study that covers Fall, Spring and Summer consecutive academic terms. Admissions to the program occur in both the Fall and Spring semester of each year, and students are expected to finish the degree in two years.

The program of study includes a balanced course offering including interdisciplinary scientific courses and research training in the field of nanotechnology. The curriculum of courses is delivered via face-to-face instruction. The program includes 3 credit hours of independent study and 6 credit hours of thesis research under the supervision of a faculty at the NanoScience Technology Center. This training will provide students with hands-on research experiences on nanomaterial synthesis, nanostructure fabrication and characterization, and application development in their interested areas.

Program Tracks

- Nanotechnology MS, Non-Thesis Track

Curriculum

The Nanotechnology MS program consists of 30 credit hours of graduate courses including 12 credit hours of required (core) courses in nanotechnology, 9 credit hours of elective courses in physics, engineering, chemistry, biology or other related fields, 3 credit hours of independent study, and 6 credit hours of thesis research.

From the core courses in nanotechnology and elective courses in related science/engineering areas, students will gain basic and broader understanding of the most advanced techniques, developments and applications of nanoscale materials and devices. From the independent study and thesis research training, the students will gain hands-on experiences to work on problems and product development involving nanoscience and nanotechnology.

Total Credit Hours Required: 30 Credit Hours Minimum beyond the Bachelor's Degree

Required Courses: 15 Credit Hours

Core Courses: 12 Credit Hours

Select four courses from the following list of courses.

IDS 6250 Introduction to Nanoscience and Nanotechnology
IDS 6254 Nanofabrication and Characterization
IDS 6252 Biomedical Nanotechnology
IDS 6255 Nanotechnology in Energy and Sustainability
IDS 6253 Bioanalytical Technology

Independent Study: 3 Credit Hours

Students will take 3 credit hours of independent study, resulting in a required research report of independent learning experience. Independent Study must have a formally defined core of knowledge to be learned by the student. In accordance with the policy of the College of Graduate Studies, the core of knowledge to be learned by the student must be specified in written form and approved by the student, the instructor, and the program coordinator prior to enrollment in Independent Study.

Elective Courses: 9 Credit Hours

IDS 6257 Principles and Techniques of Nanobiology
IDS 6258 Advanced Materials and Nanotechnology for Rechargeable Batteries
IDS 6260 Properties of Materials at Nanoscale
~~**EMA 5505 Scanning Electron Microscopy**~~
IDS 6261 Nanotechnology for Sustainable Agriculture
EMA 5586 Photovoltaic Solar Energy Materials
EMA 5060 Polymer Science and Engineering
EMA 6518 Transmission Electron Microscopy
EMA 6605 Materials Processing Techniques
~~**IDS 5127 Foundation of Bio-Imaging Science**~~
PHY 5704 Physics of Nanoelectronics Devices
PHY 5933 Selected topics in biophysics of macromolecules
OSE 5312 Light Matter Interaction
~~**IDS 6256 Principles of Nanostructure Quantum Well, Wires, and Dots**~~
[After] OSE 6938 - ST: Photonic Polymer Materials **3 Credit Hours**
MCB 5225 Molecular Biology of Disease
PCB 5238 Immunobiology
PCB 5236 Cancer Biology
CHM 6710 Applied Analytical Chemistry

Thesis: 6 Credit Hours

Students will conduct and complete an independent thesis research project under the supervision of a NanoScience Technology Center faculty. The student will defend the thesis at the completion

of the study. Students will gain hands-on research experiences on nanomaterial synthesis, nanostructure fabrication and characterization, and application development in their interested areas.

- IDS 6971 **6 Credit Hours**

Application Requirements

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline.

Applicants should have obtained an undergraduate degree in one of the following areas: physics, chemistry, biology, or engineering.

In addition to the general UCF graduate application requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended
- Résumé or Curriculum Vitae
- Goal Statement
    - The goal statement should discuss all relevant professional background and any previous research and/or teaching experience. The statement should explain the motivation behind the pursuit of a master's degree in Nanotechnology. Future career goals after the completion of the applicant's master study should be discussed.
    - The goal statement should between 500 and 1,000 words.
- Three letters of recommendation
- Applicants applying to this program who have attended a college/university outside the United States must provide a course-by-course credential evaluation with GPA calculation. Credential evaluations are accepted from World Education Services (WES) or Josef Silny and Associates, Inc. only.

The acceptance decision will be based on the assessment of the applicant's GPA from previous college/university, past work experience, recommendation letters and the statement of interest and objectives. Additionally, the committee will evaluate other academic indicators such as having completed a senior thesis, authorship on publications, internship, involvement in scientific research projects, and/or presentations at major scientific meetings and non-academic indicators such as evidence of leadership, extracurricular activities, work or military experience, and/or volunteer activities. For applicants that already have had working experiences in STEM (Science, Technology, Engineering, Mathematics) fields, emphasis will be placed on their past experiences and recommendation letters.

Readmission

Applicants who are applying for readmission need not resubmit transcripts if the transcripts are previously on file with UCF. However, the following application requirements do need to be current for the new readmission application:

- Résumé/Curriculum Vitae
- Goal Statement
- Letters of Recommendation

Application Deadlines

Nanotechnology MS	*Fall Priority	Fall	Spring	Summer
Domestic Applicants		Jul 1	Dec1	
International Applicants		Jan 15	Jul 1	
*Applicants who plan to enroll full time in a degree program and who wish to be considered for university fellowships or assistantships should apply by the Fall Priority date.				

Financials

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see the College of Graduate Studies Funding website, which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The Financial Information section of the Graduate Catalog is another key resource.

Fellowships

Fellowships are awarded based on academic merit to highly qualified students. They are paid to students through the Office of Student Financial Assistance, based on instructions provided by the College of Graduate Studies. Fellowships are given to support a student's graduate study and do not have a work obligation. For more information, see UCF Graduate Fellowships, which includes descriptions of university fellowships and what you should do to be considered for a fellowship.

Contact Info

Graduate Program

Saiful Khondaker PhD

Professor

Saiful@ucf.edu

Telephone: 407-882-2844

PVL 0111

Graduate Admissions

Anthony Tufano

gradadmissions@ucf.edu

Telephone: 407-823-2766

Millican Hall 230

Online Application

Graduate Admissions

Mailing Address

UCF College of Graduate Studies

Millican Hall 230

PO Box 160112

Orlando, FL 32816-0112

Institution Codes

GRE: 5233

GMAT: RZT-HT-58

TOEFL: 5233

ETS PPI: 5233

Graduate Fellowships

Grad Fellowships

Telephone: 407-823-0127

gradfellowship@ucf.edu

https://funding.graduate.ucf.edu

Graduate Financial Aid

UCF Student Financial Assistance

Millican Hall 120

Telephone: 407-823-2827

Appointment Line: 407-823-5285

Fax: 407-823-5241

finaid@ucf.edu

http://finaid.ucf.edu

College of Graduate Studies - Graduate Program Revision - Nanotechnology MS, Non-Thesis Track

2020-2021 Graduate Program Revision/Reactivation

General Catalog Information

This form is to be used to REVISE graduate degree programs, tracks, or certificate programs. If there are tracks being revised or added to a program, one form must be submitted for EACH program and the track(s).

Please refer to the Graduate Council Curriculum Meeting Schedule for submission deadlines.

Select *Program* below.

Program Type:* (•) Program ( ) Shared Core

Proposal Type:* Graduate Program Revision

Read before you begin

TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

IMPORT curriculum data from the Catalog by clicking in the top left corner.
FILL IN all fields required marked with an * after importing data. You will not be able to launch the proposal without completing required fields.

LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. Changes will only be tracked after proposal is launched.

College:* College of Graduate Studies

Unit / Department / College:* NanoScience Technology Center

Unit(s) Housing Program: NanoScience Technology Center

Type of Action:* ☐ Program

☑ Track

☐ Certificate

IMPORT PROGRAM NOW! Please use the Import feature to import the program information from the Catalog by clicking in the top left corner of the form.

Name of program, track and / or certificate:*	Nanotechnology MS, Non-Thesis Track
Are you revising the name of the program, track, or certificate?*	○ Yes ◉ No
Proposed Effective Term / Year:*	Fall 2020
If you will be submitting other revision forms for tracks or course actions, please list them here:	Nanotechnology MS
Is the CIP code being updated?	☐ Yes ☑ No
If yes, please provide the new CIP code:	
Rationale for revision:	Update Elective course list

Complete the remaining required fields and LAUNCH this proposal! Do not begin revisions until **after** launch. Program revisions before launch will not be tracked.

Informational Description Chart- this will import.*

College: Graduate Studies	**Degree:** MS
Department: NanoScience Technology Center	**Option:** Non-Thesis
Program Websites: http://nano.ucf.edu	

Revise catalog copy here! After you revise courses, click on the Curriculum Schema button below to revise the catalog copy. Please note: this information is what will flow directly to the graduate catalog. Any attached documents to this proposal will not be used for catalog purposes.

Follow these steps to propose courses to the revised program curriculum:

Step 1

There are two options for adding courses: "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculog Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.

Step 2

Click on "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 1. Select the courses you wish to add. For removing courses click on the X and proceed.

Prospective Curriculum*	

Impact on Current Students

Will students be moved from an existing program, track, or certificate into this revised program, track, or certificate?*	○ Yes ◉ No
If yes, state the name of the program or track where students are currently enrolled and attach a list of students if possible:	
Will students have the option to stay in their existing program, track, or certificate?*	◉ Yes ○ No
If yes, how will current students be impacted by this change?	No impact on current student

Future Students

Provide a statement of who is likely to enroll and why. Please state if there is licensure or certification that depends upon this education, etc.	No change

Year 1

Headcount:	SCHs:

Year 2

Headcount:	SCHs:

Year 3

Headcount:	SCHs:

Indicate likely career or student outcomes upon completion:	No change

Please complete the following section on financial support:

(Specify all forms of support – assistantships, fellowships, and tuition remission.)

Year 1

Number of assistantship students:	Source of funds:
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	Source of funds:

Year 2

Number of assistantship students	Source of funds:
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	Source of funds:

Year 3

Number of assistantship students:	Source of funds:
Number of fellowship students (specify fellowship):	

Number of tuition remissions:	**Source of funds:**

Attachments

Please attach the required files by navigating to the Proposal Toolbox and clicking in the top right corner of the form.

Faculty List*	○ Attached ◉ Not Applicable
Support from involved units that no duplication exists*	○ Attached ◉ Not Applicable

Administration Use Only

Catalog Ownership:	College of Graduate Studies
Program OID	7942
Program Type	Master
Degree Type	Master of Science
Status*	◉ Active-Visible ○ Inactive-Hidden

College of Graduate Studies - Graduate Program Revision - Nanotechnology MS, Non-Thesis Track

Program Description

The Master of Science in Nanotechnology Non-Thesis Track program provides students with knowledge and research training in nanoscience and nanotechnology. The program prepares students for seeking employment in industry and academia involved in nanotechnology research, product development, and commercialization, or to pursue advanced PhD degrees in related areas.

Curriculum

The Nanotechnology MS Non-Thesis Track program consists of 30 credit hours of graduate courses including 12 credit hours of required core courses in nanotechnology, 3 credit hours of independent study, 6 credit hours of required elective courses in physics, engineering, chemistry, biology, or biomedical-related science, and 9 credit hours of open elective courses in science, engineering, or business-related field.

From the core courses in nanotechnology and elective courses in related science/engineering areas, a student will gain basic and broader understanding of the most advanced techniques, development, and applications of nanoscale materials and devices. From the independent study training, the students will gain hands-on experiences to work on problems and product development involving nanoscience and nanotechnology.

Total Credit Hours Required: 30 Credit Hours Minimum beyond the Bachelor's Degree

Required Courses: 15 Credit Hours

IDS 6250 Introduction to Nanoscience and Nanotechnology

IDS 6252 Biomedical Nanotechnology

IDS 6253 Bioanalytical Technology

IDS 6254 Nanofabrication and Characterization

IDS 6255 Nanotechnology in Energy and Sustainability

Independent Study: 3 Credit Hours

- IDS 6908 - Independent Study **3 Credit Hours**

Students will receive basic training under the supervision of a NanoScience Technology Center faculty to conduct research, including ethical training, safety training, attending seminar presentations, conduction a literature survey, and using various instrumentation techniques for research.

Elective Courses: 6 Credit Hours

Elective courses may be chosen from the following recommended course list. Core courses taken beyond the 4-core course requirement may be used to satisfy the elective course requirement. Other courses may be taken as elective courses upon the approval of your graduate program director.

IDS 6257 Principles and Techniques of Nanobiology

IDS 6258 Advanced Materials and Nanotechnology for Rechargeable Batteries

IDS 6260 Properties of Materials at Nanoscale

~~**EMA 5505 Scanning Electron Microscopy**~~

~~**EMA 5587C Characterization and Reliability of PV Cells**~~

IDS 6261 Nanotechnology for Sustainable Agriculture

EMA 5586 Photovoltaic Solar Energy Materials

EMA 5060 Polymer Science and Engineering

~~**[After]**~~ ~~OSE 6938 ST: Photonic Polymer Materials **3 Credit Hours**~~

~~**IDS 5127 Foundation of Bio-Imaging Science**~~

EMA 6518 Transmission Electron Microscopy

EMA 6605 Materials Processing Techniques

PHY 5704 Physics of Nanoelectronics Devices

~~**IDS 6251 Computation, Simulation and Modeling in Nanotechnology**~~

OSE 5312 Light Matter Interaction

MCB 5225 Molecular Biology of Disease

PCB 5238 Immunobiology

PCB 5236 Cancer Biology

CHM 6710 Applied Analytical Chemistry

Open Elective Courses: 9 Credit Hours

As part of completing programmatic requirements, student must also select an additional 9 credit hours of open elective courses in the general field of science, engineering, or business. These courses must be at the graduate level and be approved by the Program Director before registration. To be noted, one of these open electives could also be another 3 credit hours of Independent Study to continue research training under the supervision of a faculty.

Application Requirements

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline.

In addition to the general UCF graduate application requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended
- Résumé or Curriculum Vitae

- Goal Statement
    - The goal statement should discuss all relevant professional background and any previous research and/or teaching experience. The statement should explain the motivation behind the pursuit of a master's degree in Nanotechnology. Future career goals after the completion of the applicant's master study should be discussed.
    - The goal statement should between 500 and 1,000 words.
- Three letters of recommendation
- Applicants applying to this program who have attended a college/university outside the United States must provide a course-by-course credential evaluation with GPA calculation. Credential evaluations are accepted from World Education Services (WES) or Josef Silny and Associates, Inc. only.

The acceptance decision will be based on the assessment of the applicant's GPA from previous college/university, past work experience, recommendation letters and the statement of interest and objectives. Additionally, the committee will evaluate other academic indicators such as having completed a senior thesis, authorship on publications, internship, involvement in scientific research projects, and/or presentations at major scientific meetings and non-academic indicators such as evidence of leadership, extracurricular activities, work or military experience, and/or volunteer activities. For applicants that already have had working experiences in STEM (Science, Technology, Engineering, Mathematics) fields, emphasis will be placed on their past experiences and recommendation letters.

Application Deadlines

Non-Thesis	*Fall Priority	Fall	Spring	Summer
Domestic Applicants		Jul 1	Dec 1	
International Applicants		Jan 15	Jul 1	

*Applicants who plan to enroll full time in a degree program and who wish to be considered for university fellowships or assistantships should apply by the Fall Priority date.

Financials

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see the College of Graduate Studies Funding website, which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The Financial Information section of the Graduate Catalog is another key resource.

Fellowship

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Contact Info

Graduate Program

Saiful Khondaker PhD

Professor

Saiful@ucf.edu

Telephone: 407-882-2844

PVL 0111

Graduate Admissions

Anthony Tufano

gradadmissions@ucf.edu

Telephone: 407-823-2766

Millican Hall 230

Online Application

Graduate Admissions

Mailing Address

UCF College of Graduate Studies

Millican Hall 230

PO Box 160112

Orlando, FL 32816-0112

Institution Codes

GRE: 5233

GMAT: RZT-HT-58

TOEFL: 5233

ETS PPI: 5233

Graduate Fellowships

Grad Fellowships

Telephone: 407-823-0127

gradfellowship@ucf.edu

https://funding.graduate.ucf.edu

Graduate Financial Aid

UCF Student Financial Assistance

Millican Hall 120

Telephone: 407-823-2827

Appointment Line: 407-823-5285

Fax: 407-823-5241

finaid@ucf.edu

http://finaid.ucf.edu

College of Medicine - Grad Course Addition - MDE 7495 Orthopedic Spine Surgery Elective

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:*	Grad Course Addition
College:*	College of Medicine
Unit / Department / College:*	College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:*	MDE 7495 Orthopedic Spine Surgery Elective
Course Instructor (Must be Approved Graduate Faculty/Scholars):*	Maahir Haque, MD.
Department Chair Phone Number:*	407-266-1101
Dept Chair Email*	pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDE	**Number:*** 7495
Course Title:* Orthopedic Spine Surgery Elective	
30 Character Abbreviation:* Ortho Spine Surgery Elective	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* M3 students will get a brief sense of the outpatient (and possibly inpatient) practice of orthopedics and spine surgery.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of the M2 year	
Corequisite(s): MDC 7600	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: **http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf**

Credit Hours:*	6
Instruction Time:*	40 hrs/week
Lab / Studio / Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40 / week
Variable Credit (0-99):	

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☑ Odd Fall ☑ Even Fall ☑ Odd Spring ☑ Even Spring ☐ Odd Summer ☐ Even Summer ☐ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	M3 students are required to take one elective rotation in the M3 year. This will be one option.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	M3 medical students
What is the estimated annual enrollment?*	14

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with actions to take in various types of emergencies**
  - **Statement regarding accommodations for active duty military students**

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

College *of* Medicine

M3 Elective Proposal Form

Proposal Date: 03/24/2019
Course Title: Orthopedic Spine Surgery **Department/Specialty:** Orthopedics
Brief Description (25 words maximum): The students will get a brief sense of the outpatient (and possibly inpatient) practice of orthopedics and spine surgery.

Primary Preceptor Supervising Students: Maahir Haque, MD **Office Location:** Orlando and Celebration, Fl
Email: maahirhaque@gmail.com **Office Phone:** 321-939-0222

Please confirm course type: x M3 Elective (4 weeks) or M4 Elective (unsure of duration) [if possible]

Location: 410 Celebration Pl Suite 106, Celebration, Fl, 34747 AND 7350 Sand Lake Commons Blvd #1102, Orlando, FL 32819

- **Location to Report on first day:** Call Preceptor to Discuss **Reporting Time:** 730-8am
- **Contact Person** (for information/ scheduling): Dr. Haque

Block 1 5-20-19 to 6-14-19	Block 2 6-17-19 to 7-12-19	Block 3 7-15-19 to 8-9-19	Block 4 8-19-19 to 9-13-19	Block 5 9-16-19 to 10-11-19	Block 6 10-14-19 to 11-8-19	Block 7 11-11-19 to 12-6-19 +Thanksgiving Break	Block 8 12-9-19 to 12-20-19 and 1-6-20 to 1-17-20	Block 9 1-20-20 to 2-14-20	Block 10 2-17-20 to 3-13-20	Block 11 3-16-20 to 4-10-20	Block 12 4-13-20 to 5-8-20

- **Contact Phone and e-mail:** 908-208-1290 – maahirhaque@gmail.com

What is the number of students per rotation block? 2
Which blocks will this rotation be offered during the academic year? Place an "X" in the boxes below:

5-12

Prerequisites (check all that apply): ☐ Consent of Instructor
Completion of Core Clerkship in: ☐ Surgery. ☐ Internal Medicine/Family Medicine. ☐ Pediatrics. ☐ Psychiatry. ☐ Neurology. ☐ OB-GYN. ☐ Other:
Estimated total contact hours/week: 18-40
Estimated % of time - Inpatient: <50% **Estimated % of time - Outpatient:** >50%
Estimated % of time – Indirect contact time (independent study or online course work: 5%
Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week 20 **follow-ups/week** 20
On-call schedule: not expected **Weekend duties:** not expected
For non-patient care rotations, describe the typical learning activities and responsibilities of the student:

Describe the expected level of supervision of students by faculty and residents:___The students will work directly with the physician and/or his partners, as they desire. They will gain experience working alongside an experienced PA._____

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn

- Rotating students will gain experience in a busy orthopedic spine surgery practice. Spine surgery is unique in that while the surgical practice is quite specialized, the outpatient management of patients requires a working understanding of and diagnostic skills necessary to rule in/out a variety of pathophysiologies based on a patient's complaint, physical exam, laboratory data, and imaging findings. Rotating students will begin to understand how the successful management of a patient must begin with a proper diagnosis. Pain and neurologic complaints are an extremely common presenting issue for patients across multiple disciplines, from primary care to emergency medicine to oncology or the surgical specialties. By the end of the rotation, students are expected to have developed a knowledge base and clinical skills necessary to be able to identify and understand some very basic orthopedic and spine surgery complaints. Students are welcome but not expected to participate in the inpatient practice, potentially to include observation in the OR. The student is expected to complete an EBM project during the rotation to present to the team.

Learning Objectives: Please group these under the following headings:
Patient care:
☐ The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☐ Click here to enter text.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge as well as the application of this knowledge to patient care. The student will develop knowledge in the following areas:
Orthopedic physical exam, recognize signs and symptoms of disease, understand basic spine surgical treatment modalities, understand basic musculoskeletal pain management concepts, develop and present a treatment plan

Practice Based Improvement: The medical student is expected to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on ongoing self-evaluation and life-long learning.
Identify areas for improvement and develop strategies for improvement,
Develop and maintain a willingness to learn from errors and improve one.s medical knowledge

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.
Effectively communicate with care team and patients

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patients, their profession, and society.
demonstrate respect, compassion, integrity and altruism in relationship with patients, families and colleagues, demonstrate respect for religious beliefs, adhere to principles of confidentiality, recognize and identify areas of improvement in personal and in peer performance.

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.
Utilize resources to provide optimal healthcare, recognize limitations and opportunities regarding the individual patient care, apply evidence based, cost-conscious strategies to prevention, diagnosis, and disease management.

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects:
Students will participate in weekly didactics. Students will prepare a literature review on a specialty topic and give a brief presentation. Students will be expected to participate in office hours with the Preceptor or, on occasion, with his partners in the office. When students are scheduled to the operating room, the first case starts at 7:30am except on alternating Fridays, when the first case will start at/8:30am. The student should arrive 30 minutes prior to the first case to be able to discuss the treatment plan with the assigned preceptor and help prepare the operating room for the first case.

Required textbooks and articles: Orthopedic Surgery Clerkship: A Quick Reference Guide for Senior Medical Students – Adam E.M. Eltorai; Rothman-Simeone and Herkowitz's The Spine, 2 Vol Set (Rothman Simeone the Spine), Steven R. Garfin, MD; Surgical Exposures in Orthopaedics: The Anatomic Approach – Stanley Hoppenfeld

How will the student's performance be assessed?
How/when will formative feedback be given? Click box to agree to the statement below:
☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. Formative feedback for continuous improvement will be given throughout the rotation.
☐ Other: Click here to enter information regarding how the student will receive formative feedback.

Summative evaluation: Click the box to agree to the statement below:
☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.
☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Signature of Sponsoring Preceptor _____ Date _____

Signature of Clerkship Director _____ Date _____

Signature of Assistant Dean of Medical Education _____ Date 4-19-19

Curriculum Committee Chair _____ Date 4-19-19

COM Dean _____ Date 4.19.19

College of Medicine - Grad Course Addition - MDE 8095 Simulation in Medical Education Elective

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:*	Grad Course Addition
College:*	College of Medicine
Unit / Department / College:*	College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:*	MDE 8095 Simulation in Medical Education Elective
Course Instructor (Must be Approved Graduate Faculty/Scholars):*	Christopher Gallagher, MD; Analia Castiglioni, MD; Dan Franceschini, RN
Department Chair Phone Number:*	407-266-1101
Dept Chair Email*	pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDE	**Number:*** 8095
Course Title:* Simulation in Medical Education Elective	
30 Character Abbreviation:* Simulation Elective	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* After reviewing current trends, literature and methodologies in medical simulation, learners will design and deliver one complete scenario to their peers in a simulated clinical setting.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of the M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: **http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf**

Credit Hours:*	3
Instruction Time:*	40 per week
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40 per week
Variable Credit (0-99):	

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☐ Odd Fall ☐ Even Fall ☐ Odd Spring ☐ Even Spring ☐ Odd Summer ☐ Even Summer ☑ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	4th year medical students are required to complete 6 months of elective clinical rotations. This will be one option.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	48

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion	

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with**

actions to take in various types of emergencies

Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

☐Approved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE/ELECTIVE/ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 5/10/2019
Course Title: Simulation in Medical Education: From Design to Delivery
Department/Specialty: Medical Education / Simulation Education
Brief Description (25 words maximum): After reviewing current trends, literature and methodologies in medical simulation, learners will design and deliver one complete scenario to their peers in a simulated clinical setting.

Primary Preceptor Supervising Students: Christopher Gallagher; MD, Analia Castiglioni, MD; Dan Franceschini, MSN, RN, CHSE
Office Location: 6850 Lake Nona Blvd., Suite 321 (Clinical Skill & Simulation Center), Orlando, FL 32827
Email: Christopher.Gallagher@ucf.edu; Analia.Castiglioni@ucf.edu; DanFran@ucf.edu
Office Phone: 407-266-1155

Please indicate course type (select one): ☐M3 Clerkship Selective

☐M4 Clerkship Elective (4 wks) ☒M4 Clerkship Elective (2 wks) ☐M4 Clerkship Elective (2 or 4 wks)

☐M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** UCF College of Medicine, Suite 321
- **Reporting Time:** 8am
- **Contact Person** (for information/ scheduling)**:** Dan Franceschini
- **What facilities will you use for your clinical rotations:** Simulated clinical environment at UCF COM
- **Contact Phone and e-mail:** 407-266-1155; danfran@ucf.edu

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☒June ☒July ☒August ☒September ☒October ☒November ☒December ☒January ☒February ☒March ☒April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? 2 - 4

Prerequisites (check all that apply):
☒Completion of M2 ☒Completion of M3 ☒Consent of Instructor
☐Completion of Core Clerkship in Click here to enter text. ☐Other: Click here to enter text.
Length of program (weeks): 2 weeks
Estimated total contact hours/week: 12
Estimated % of time - Inpatient: 0% No patient interaction - Simulation environment
Estimated % of time - Outpatient: 50% No patient interaction - Simulation environment
Estimated % of time – Indirect contact time (independent study or online course work: 50%

Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week No patient contact - Simulation environment **follow-ups/week** No patient contact - Simulation environment
On-call schedule: Not Applicable
Weekend duties: Not Applicable
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: Active / Immersive Learning in a simulated clinical environment; Individual and Group settings
Describe the expected level of supervision of students by faculty and residents: 2 Faculty / 2 - 4 Learners

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Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of Medical Simulation / Education.

This program will be clinically-aligned with the current curriculum. It will highlight a clinical condition recently explored in the didactic setting and enable participants to broaden their knowledge of that condition by applying relevant physiologic and pharmacologic principles to simulation case design, development and delivery.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☒Other: Participants will design a simulation case for a simulated patient and apply the above-mentioned principles of care to that simulated patient encounter.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to the selected clinical condition, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:

- Anatomy, physiology, pharmacology, disease process, physical exam findings, focused history guidelines, development of differential diagnoses, creation of various diagnostic values and establishment of treatment plan appropriate to case condition.

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.

- Utilizing various principles of simulation in healthcare, participants will create a unique (simulated) patient care encounter (case). Case creation enables participants to apply existing knowledge to structured simulation templates in a controlled, immersive environment guided by clinical Faculty. This experience will broaden perspectives of practice and solidify pathopysiologic concepts through active learning and peer development.

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- This program will emphasize interpersonal and interprofessional communication throughout the continuum of a selected patient care encounter. Utilizing established team communication strategies, concepts and principles, participants will create a simulated patient care encounter inclusive of communication roles, goals and objectives. During all phases of this elective, particpants will communicate with one another, various Faculty, Medical Librarians and fellow medical students.

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.

- Throughout this experience, participants will be expected to demonstrate all concepts of professionalism described above in addition to privacy and confidentiality (case content). A common theme of continuous improvement will be highlighted throughout this elective to ensure a safe, professional learning environment.

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

- This elective will continuously emphasize the continuum of care within the larger context of healthcare in general. It is expected that participants will engage (or verbalize engagement of) various healthcare-related resources available to them and applicable to the case.

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: Participants will explore simulation through literature review, content development, case creation, consultation sessions with Faculty and/or subject matter experts, case refinement and case presentation with peers. From focused scenarios to complex conditions, each cohort will practice and continuously develop simulation skills including debrief and feedback, apply principles of anatomy, physiology, pharmacology, communication, teamwork and professionalism to each case and enhance existing knowledge of systems-based assessment and care.

Required textbooks and articles: Participants will be required to review current evidence-based medicine and simulation literature throughout this elective as they develop and deliver selected scenarios. All participants are expected to utilize existing COM-approved resources (electronic, physical text and others) to ensure case content validity. There will be no additional or extra textbooks required.

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☒ Other: All participants will receive oral feedback regularly from course/visiting Faculty and/or the Medical Director of the Clinical Skills and Simulation Center at UCF College of Medicine.

Summative evaluation: Click the box to agree to the statement below.

☐ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☒ Other: The summative evaluation will be based on level of participation, development of case content, application of current evidence-based medicine, simulation principles and current curricular relevence, general case creation, peer delivery of a simulation encounter and subsequent debrief session(s).

Name of Sponsoring Preceptor: Christopher Gallagher, MD
Date: 5/8/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director _____ Date _____

Signature of Assistant Dean of Medical Education MKlapheke MD Date 5-13-19

Curriculum Committee Chair _____ Date 5-17-19

COM Dean _____ Date 5 17 19

College of Medicine - Grad Course Addition - MDE 8200 Elective in Ambulatory Internal Medicine

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:*	Grad Course Addition
College:*	College of Medicine
Unit / Department / College:*	College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:*	MDE 8200 Elective in Ambulatory Internal Medicine
Course Instructor (Must be Approved Graduate Faculty/Scholars):*	Maria Cannarozzi, MD
Department Chair Phone Number:*	407-266-1101
Dept Chair Email*	pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDE	**Number:*** 8200
Course Title:* Elective in Ambulatory Internal Medicine	
30 Character Abbreviation:* Elective in Amb IM	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* This 2 or 4 week experience will provide advanced clinical training in the care of patients age 16 and older in an ambulatory clinic setting.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of the M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is

for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	3-6
Instruction Time:*	40 per week
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40/week
Variable Credit (0-99):	3-6

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☑ Odd Fall ☑ Even Fall ☐ Odd Spring ☐ Even Spring ☐ Odd Summer ☐ Even Summer ☐ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	4th year medical students are required to complete 6 months of elective clinical rotations. This will be one option. **Course offered as 2 or 4 week rotation. 2-week rotation is 3 credit hours, 4 week rotation is 6 credit hours.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	1

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety.**

encouraging students to be aware of their surroundings and familiar with actions to take in various types of emergencies

Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

☐Approved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE/ELECTIVE/ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 6/27/2019
Course Title: Clerkship Elective in Ambulatory Internal Medicine - UCF Health Clinical Facilities
Department/Specialty: Internal Medicine
Brief Description (25 words maximum): This 2 or 4 week experience will provide advanced clinical training in the care of patients age 16 and older in an ambulatory clinic setting at UCF Health

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Primary Preceptor Supervising Students: Maria Cannarozzi, MD
Office Location: UCF Health, 3400 Quadrangle Boulevard, Orlando, FL 32817
Email: maria.cannarozzi@ucf.edu
Office Phone: 407.266.3627 - ask for Maria Barreto, administrative assistant or contact her directly at 407.882.4753

Please indicate course type (select one): ☐M3 Clerkship Selective

☐M4 Clerkship Elective (4 wks) ☐M4 Clerkship Elective (2 wks) ☒M4 Clerkship Elective (2 or 4 wks)

☐M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** 3400 Quadrangle Boulevard, Orlando, FL 32817
- **Reporting Time:** 8:00 AM
- **Contact Person** (for information/ scheduling): Maria Barreto, administrative assistant - maria.barreto@ucf.edu
- **What facilities will you use for your clinical rotations:** UCF Health ambulatory medicine (clinic) facilties in East Orlando and Lake Nona
- **Contact Phone and e-mail:** Maria Barreto, administrative assistant phone 407.882.4753, email: maria.barreto@ucf.edu

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☐June ☐July ☐August ☒September ☐October ☐November ☐December ☐January ☐February ☐March ☐April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? 1

Prerequisites (check all that apply):
☒Completion of M2 ☒Completion of M3 ☒Consent of Instructor
☐Completion of Core Clerkship in Click here to enter text. ☐Other: Click here to enter text.

Length of program (weeks): 2 or 4 weeks
Estimated total contact hours/week: 30-40 hours per week
Estimated % of time - Inpatient: 0

Estimated % of time - Outpatient: 90%
Estimated % of time – Indirect contact time (independent study or online course work: 10%
Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week 8 **follow-ups/week** 32
On-call schedule: none
Weekend duties: none
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: N/A
Describe the expected level of supervision of students by faculty and residents: Students will be supervised by UCF Health faculty only (no resident supervision). Faculty will oversee students as a traditional preceptor in that students will see patients independently and formulate a preliminary plan of care for the patient. Faculty member will oversee/approve plan of care and see each patient/validate necessary history elements or findings.

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of internal medicine.

- The goal of this rotation is to allow the M-4 student to have greater independence and involvement in the care of internal medicine patients in the ambulatory setting. This will include EMR documentation, assessment and plan of care for such patients, under the direct supervision of a UCF facult member. Expectations (compared to M-3 student) will include greater volume of patients seen, advanced history-taking and assessment skills, demonstration of fundamental medical knowledge in decision-making and formulation of a plan of care for selected patients.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☒Other: The medical student will practice patient-based care in a Level 3 certified Patient Centered Medical Home (PCMH)

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to internal medicine, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:

- General areas of internal medicine (beyond those expected in a core M-3 IM curriculum), including first assessment and ability to assess urgency of illness, need for inpatient vs. outpatient care, need for specialty consultation

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.

- The student will be expected to investigate various methods of treatment in the care of patients and educate him/herself by critically appraising literature related to the topic of interest. The student will observe clinical workflow and design, and suggest improvement, offer suggestions if flaws or other areas of potential improvement are noticed.

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- The student is expected to communicate verbally and in written communication (electronic health record) with other medical professionals in the clinic, and may be asked to communicate with outside offices or services, on behalf of the patient, in order to advance his/her care.

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.

- The student is expected to demonstrate professionalism at all times, toward colleagues, coworkers and patients. This includes timely arrival to clinic, professional dress and demeanor and appropraite interactions with all persons.

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

- The student may investigate resources on behalf of his/her patients and may advocate on behalf of patient(s) externally in the community. The student will assess home living situations and determine if approprriate (with faculty oversight) for each patient.

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: Students will participate in daily patient care, including daily patient care 'huddles' to review patients for the day. UCF Health Grand Rounds occurs on the fourth Friday of each month at 12:30 pm. Students will be expected to attend this educational event, as well as any other education offerings which may occur during the rotation period.

Required textbooks and articles: There are no required textbooks/articles for this rotation.

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☐ Other: Click here to enter information regarding how the student will receive formative feedback.

Summative evaluation: Click the box to agree to the statement below.

☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Name of Sponsoring Preceptor: Maria L. Cannarozzi
Date: 6/27/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director _____ Date _____

Signature of Assistant Dean of Medical Education MKlapthe MD Date 7-8-19

Curriculum Committee Chair _____ Date 7-12-19

COM Dean _____ Date 7.19.19

College of Medicine - Grad Course Addition - MDE 8248 Elective in Pulmonary Critical Care and Sleep Medicine

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:*	Grad Course Addition
College:*	College of Medicine
Unit / Department / College:*	College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:*	MDE 8248 Elective in Pulmonary Critical Care and Sleep Medicine
Course Instructor (Must be Approved Graduate Faculty/Scholars):*	Karuna Ahuja, MD
Department Chair Phone Number:*	407-266-1101
Dept Chair Email*	pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDE	**Number:*** 8248
Course Title:* Elective in Pulmonary Critical Care and Sleep Medicine	
30 Character Abbreviation:* Pulmo CC and Sleep Med Electiv	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* This elective will give the students an extensive exposure with insights into the specialty of pulmonary/critical care/sleep medicine.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is

for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	3
Instruction Time:*	40/week
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40/week
Variable Credit (0-99):	

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☐ Odd Fall ☐ Even Fall ☐ Odd Spring ☐ Even Spring ☐ Odd Summer ☐ Even Summer ☑ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	4th year medical students are required to complete 6 months of elective clinical rotations. This will be one option.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	24

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion	

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with**

actions to take in various types of emergencies

Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

☐Approved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE/ELECTIVE/ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 6/4/2019
Course Title: Clinical Clerkship - Florida Cardiopulmonary Center
Department/Specialty: Internal Medicine/ Pulmonary, Critical Care & Sleep Medicine
Brief Description (25 words maximum): Outpatient/inpatient Pulmonary/Critical Care practice including Sleep lab.

Primary Preceptor Supervising Students: Karuna Ahuja, MD, FCCP, DABSM
Office Location: 915 Harley Strickland Blvd., Orange City, FL 32763
Email: Ana Pena (Office Manager): admin@flheartlung.com
Office Phone: Ana Pena: Office: 386-775-8520, cell: 407-617-3159

Please indicate course type (select one): ☐M3 Clerkship Selective

☐M4 Clerkship Elective (4 wks) ☒M4 Clerkship Elective (2 wks) ☐M4 Clerkship Elective (2 or 4 wks)

☐M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** 915 Harley Strickland Blvd., Orange City, FL 32763
- **Reporting Time:** 8:30 AM
- **Contact Person** (for information/ scheduling)**:** Ana Pena (Office Manager)
- **What facilities will you use for your clinical rotations:** Offices in Orange City & Lake Mary FL and Central Flordia Regional Hospital, Sanford, FL
- **Contact Phone and e-mail:** Ana Pena (Office Manager): admin@flheartlung.com; Office phone: 386-775-8520, cell: 407-617-3159

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☐June ☒July ☒August ☒September ☒October ☒November ☐December ☒January ☒February ☒March ☒April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? 1

Prerequisites (check all that apply):
☐Completion of M2 ☒Completion of M3 ☐Consent of Instructor
☐Completion of Core Clerkship in Click here to enter text. ☐Other: Click here to enter text.

Length of program (weeks): 4 weeks
Estimated total contact hours/week: 40-50
Estimated % of time - Inpatient: 20%
Estimated % of time - Outpatient: 80%
Estimated % of time – Indirect contact time (independent study or online course work: 20%

Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week 9-10 **follow-ups/week** prn as needed in office, daily in hospital
On-call schedule: none
Weekend duties: none
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: research and presentations on assigned topics
Describe the expected level of supervision of students by faculty and residents: The student will be responsible for all components of patient care (including history, physical examination, assessment, plan and counseling) under the supervision of the faculty preceptor. Student may participate in observing or perfoming tests as opportunity arise at the discretion of their preceptor.

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of Pulmonary/Critical Care/Sleep Medicine. .

- This rotation will give the students an extensive exposure with insights into the speciality of Pulmonary/Critical Care/Sleep Medicine. The students will be able to see wide variety of acute and chronic illness with their diagnostic approach and management. Since most of tests are done in office setting they will have opportunity to perform some and observe/interpret others under direct supervision. The tests include: PFTs, 6 minute walk tests, overinght Polysomnography etc. Overall the students will have great experience in most aspect of this speciality.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☒Other: The students will develop an understanding of coordination of care by different team members to provide complete excellent care to the patient.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to Pulmonary/Critical Care/Sleep Medicine, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:

- The students will learn to diagnose common pulmonary problems like bronchial asthma, COPD, interstial lung disease, lung cancer etc in office setting with their differential diagnosis and management. They will also be able to learn and treat variety of sleep disorders and interpret polysomography done in office sleep lab. Will have exposure to management of critically ill patients in intensive care units in hospital.

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.

- Research and apply ACCP/ATS guidelines for common pulmonary disorders
- Provide scholarly articles to support clinical decision making for work up and/or managment plan
- Find and provide appropriate community resources to patient and their families

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- Provide effective communication with team members and family during patient visit
- Synthesis of appropriate work up, plan and pass on anticipatory management guidane to family
- Ability to express effectively patient care and management to preceptor and other health care memebers during case presentations
- Application of direct feedback from preceptor and family into the student's medical practice

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.

- Professional appearance, attire and discipline with punctuality
- Fully understanding patient confidentiality and HIPPA privacy
- Participate in social, ethical and culturally sensitive discussions with patient and staff

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

- Understanding the concept of Home Health Care, Rehabilitation Center, Nursing Home and Hospice care. Ability to communicate with team members including social workers and case managers to decide best place for patients continuity of care.

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: The students will participate in patients care in the office visits as well as in-patient hospital setting. The student will be responsible for all components of the visits including history, physical examination, assessment, plan and counselling under the supervision of faculty preceptor. The student will also make a formal presentation on a mutually agreable topic in presence of staff and other physicians prior to the end of the rotation.

Required textbooks and articles: ACCP/ATS guidelines, Uptodate.com

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☐ Other: Click here to enter information regarding how the student will receive formative feedback.

Summative evaluation: Click the box to agree to the statement below.

☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Name of Sponsoring Preceptor: Karuna Ahuja, MD, FCCP, DABSM
Date: 6/4/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director_____ Date _____

Signature of Assistant Dean of Medical Education MKlaphake MD Date 7-8-19

Curriculum Committee Chair [signature] Date 7-19-19

COM Dean [signature] Date 7.19.19

College of Medicine - Grad Course Addition - MDE 8348 Telemedicine Elective

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:* Grad Course Addition

College:* College of Medicine

Unit / Department / College:* College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:* MDE 8348 Telemedicine Elective

Course Instructor (Must be Approved Graduate Faculty/Scholars):* William Gonzalez, MD

Department Chair Phone Number:* 407-266-1101

Dept Chair Email* pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDE	**Number:*** 8348
Course Title:* Telemedicine Elective	
30 Character Abbreviation:* Telemedicine Elective	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* This is an introductory course to familiarize students with key concepts, competencies, and applications of Telemedicine.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is

for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	3
Instruction Time:*	40/week
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40/week
Variable Credit (0-99):	

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☐ Odd Fall ☐ Even Fall ☐ Odd Spring ☐ Even Spring ☐ Odd Summer ☐ Even Summer ☑ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	4th year students are required to complete 6 months of elective clinical rotations.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	48

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with actions to take in various types of emergencies**
  - **Statement regarding accommodations for active duty military students**

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

☐Approved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE/ELECTIVE/ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 6/25/2019
Course Title: Telemedicine
Department/Specialty: Family Medicine
Brief Description (25 words maximum): This is an introductory course to familiarize students with key concepts, competencies and applications of Telemedicine.

Primary Preceptor Supervising Students: William Gonzalez, MD
Office Location: 6900 Tavistock Lakes Blvd, Suite 400, Orlando, FL 32827
Email: wgonzalezmd@gmail.com
Office Phone: 407-757-8383, texting preferred

Please indicate course type (select one): ☐M3 Clerkship Selective

☐M4 Clerkship Elective (4 wks) ☒M4 Clerkship Elective (2 wks) ☐M4 Clerkship Elective (2 or 4 wks)

☐M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** Harriet F. Ginsburg Health Sciences Library
- **Reporting Time:** 1:30 PM
- **Contact Person** (for information/ scheduling)**:** William Gonzalez, MD
- **What facilities will you use for your clinical rotations:** My office and virtual/online platform
- **Contact Phone and e-mail:** 407-757-8383, texting preferred; wgonzalezmd@gmail.com

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☐June ☒July ☒August ☒September ☒October ☐November ☐December ☒January ☒February ☒March ☐April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? 4

Prerequisites (check all that apply):
☒Completion of M2 ☒Completion of M3 ☒Consent of Instructor
☐Completion of Core Clerkship in Click here to enter text. ☐Other: Click here to enter text.

Length of program (weeks): 2 weeks
Estimated total contact hours/week: 15
Estimated % of time - Inpatient: 0%
Estimated % of time - Outpatient: 25%
Estimated % of time – Indirect contact time (independent study or online course work: 75%
Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week 5 **follow-ups/week** 5

On-call schedule: None
Weekend duties: None
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: Review and study didactic material, participation in case-based learning, attend the clinical site experience, prepare a written report.
Describe the expected level of supervision of students by faculty and residents: Direct supervision by William Gonalez, MD.

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of Telemedicine for Outpatient Primary Care.
Medical students will be introduce to key concepts, competencies and applications of telemedicine as a method to delivery of quality medical care.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☒Other: 1) Student understands the provider-patient relationship within the context of a telemedicine encounter. 2) Student understands the process of Informed Consent for Telemedicine Services. 3) Student understands privacy and confidentiality (HIPAA) within the context of telemedicine. 4) Student demonstrates awareness of technology pitfalls and privacy (not all technology is HIPAA compliant—text, email). 5) Student understands the importance of screening other family members and/or care takers accompanying the patient (for health care provision, risk assessment, and privacy purposes). 6) Student is capable to take a standard history. 7) Student considers patient site and geographic location factors. 8) Student considers patient culture, values, behaviors and technological needs/preferences (social determinants of health). 9) Student understands the importance of assessing patient safety and stratify risk factors remotely (unstable patient, suicidal risk, safety of surrounding area); considers the appropriateness of the telemedicine encounter and its limitations.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to Telemedicine, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:
1) Student understands the Medical Standard of Care as it applies equally to both in-person care and telemedicine. 2) FLORIDA STANDARDS FOR TELEMEDICINE PRACTICE. 3) Student is aware of telemedicine guidelines and best practices — American Telemedicine Association, American Medical Association, Federation of Medical State Boards, American College of Radiology.

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.
1) Student is aware of strengths, deficiencies, and limits in one's knowledge and expertise of telemedicine. 2) Student must think creatively to solve problems encountered during telemedicine sessions. 3) Student is familiar with the resources available for telemedicine research and self-learning.

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

1) Student understands the importance of effective and clear communication with patient, family, and other health care providers via telemedicine. 2) Student understands the importance of putting patients at ease when they feel insecure about using telemedicine technology. 3) Student demonstrate the ability to troubleshoot communication difficulties via telemedicine. 4) Student understands the importance of maintaining comprehensive, relevant and timely medical records of telemedicine encounters within an EHR. 5) Student is familiar with InterProfessional Education (IPE) and InterProfessional Collaboration (IPC); and the Core Competencies for IPC.

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.
1) Student is aware of telemedicine regulations; demonstrates awareness of different inter-state regulations. 2) Student is aware of legal and jurisdictional issues related to prescribing drugs via telemedicine (state board law/scope, controlled substances…). 3) Student demonstrates ethical behavior and places patient welfare above other interests. 4) Student exhibits ethically-correct attitude during teleconferencing — honesty, privacy & confidentiality, and personal/professional integrity. 5) Student considers issue of health literacy, cultural competency and social determinants of health during telemedicine encounters.

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.
1) Student understands how to work effectively in various health care settings via telemedicine; outpatient, inpatient, rural, urban, small practice, large trauma center, etc... 2) Student is able to coordinate patient care within the healthcare system; both in-person and via telemedicine. 3) Student understands procedures and protocols to facilitate health care access for Americans with Disabilities; via telemedicine and other electronic means of communications. 4) Student has the knowledge of emergency procedures and what to do in an emergency during a telemedicine encounter.

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: 1) Didactic teaching: online and webinars. 2) Case-based learning: video/webinar. 3) Clinical Site Experience. 4) Report Presentation.

Required textbooks and articles: Rheuban K.S. Krupinski E.A. Understanding Telehealth. Access Medicine; 2018. (available as an e-book in the COM Library)

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☐ Other: Click here to enter information regarding how the student will receive formative feedback.

Summative evaluation: Click the box to agree to the statement below.

☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Name of Sponsoring Preceptor: William Gonzalez, MD

Date: 5/15/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director _____ Date _____

Signature of Assistant Dean of Medical Education MKlapheke MD Date 7-8-19

Curriculum Committee Chair _____ Date 8-26-19

COM Dean _____ Date 8-30-19

College of Medicine - Grad Course Addition - MDE 8412 General Outpatient Pediatrics Clinic

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:* Grad Course Addition

College:* College of Medicine

Unit / Department / College:* College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:* MDE 8412 General Outpatient Pediatrics Clinic

Course Instructor (Must be Approved Graduate Faculty/Scholars):* Michelle Tellado, MD

Department Chair Phone Number:* 407-266-1101

Dept Chair Email* pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDE	**Number:*** 8412
Course Title:* General Outpatient Pediatrics Clinic	
30 Character Abbreviation:* Peds Outpatient Clinic	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* This rotation will give the student a broad exposure to general pediatrics focusing on outpatient primary care.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is

for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	3-6
Instruction Time:*	40 per week
Lab / Studio / Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40 per week
Variable Credit (0-99):	3-6

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☐ Odd Fall ☐ Even Fall ☐ Odd Spring ☐ Even Spring ☐ Odd Summer ☐ Even Summer ☑ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	4th year medical students are required to complete 6 months of elective clinical rotations. This will be one option. **Course offered as 2 or 4 week rotation. 2-week rotation is 3 credit hours, 4 week rotation is 6 credit hours.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	11

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety.**

encouraging students to be aware of their surroundings and familiar with actions to take in various types of emergencies

Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

☐Approved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE/ELECTIVE/ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 4/18/2019
Course Title: Clinical Clerkship - General Outpatient Pediatrics Clinic
Department/Specialty: Pediatrics
Brief Description (25 words maximum): Outpatient general pediatrics

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Primary Preceptor Supervising Students: Participating CHA Providers
Office Location: Student will rotate at Preceptors primary practice location
Email: for scheduling: michelle.tellado@nemours.org
Office Phone: for scheduling: (407) 650-7033 [NCPC DTN]

Please indicate course type (select one): ☐M3 Clerkship Selective ☐M3 Clerkship Elective

☐M4 Clerkship Elective (4 wks) ☐M4 Clerkship Elective (2 wks) ☒M4 Clerkship Elective (2 or 4 wks)

☐M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** NCPC Locations (including Central Florida area, Winter Haven, Vero Beach, Palm Bay and The Villages) housing will not be provided.
- **Reporting Time:** 0800
- **Contact Person** (for information/ scheduling)**:** Dr. Michelle Tellado
- **Contact Phone and e-mail:** (321) 213-1953 Michelle.Tellado@nemours.org

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☒June ☒July ☒August ☒September ☒October ☒November ☐December ☒January ☒February ☒March ☒April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? ONE (1) per site

Prerequisites (check all that apply):
☐Completion of M2 ☒Completion of M3 ☐Consent of Instructor
☐Completion of Core Clerkship in Click here to enter text. ☒Other: specific interest in pediatrics

Length of program (weeks): 2 or 4 weeks
Estimated total contact hours/week: 40-50
Estimated % of time - Inpatient: 0%
Estimated % of time - Outpatient: 100%
Estimated % of time – Indirect contact time (independent study or online course work: 10%
Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week ~5-10 clinic patients per session **follow-ups/week** prn as needed in clinic

On-call schedule: none
Weekend duties: none
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: research and presentation on assigned topics
Describe the expected level of supervision of students by faculty and residents: The student will be responsible for all components of the patient visit (including history gathering, physical examination, assessment/plan, and counseling) under the immediate supervision of their faculty preceptor. The student may have supervised participatation in phone comunication with families, giving immunizations after training, and other procedures as opportunity arise at the discretion of their preceptor.

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of Pediatrics.

- This rotation will give the student a broad exposure to general pediatrics focusing on outpatient primary care. The student will encounter a wide variety of acute and chronic illness, simple trauma/injury care, and well child care from 0-18 years with an emphasis on normal development, preventative medicine, and immunizations.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☒Other: The student will develop an understanding of the team approach to care delivery and appreciation of the contributions made by all members of the team.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to Pediatrics, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:

- Understanding and implementation of thorough and appropriate examination of newborn infants
- Evaluation of patients presenting with common childhood illnesses with emphasis on infectious diseases
- Learning appropriate well child care and spplication of preventative
- Understanding and application of current immunization schedule and catch-up vaccine processes

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.

- Research and apply pediatric clinical guidelines for common newborn/pediatric illnesses
- Provide scholarly articles to support clinical decision making for work up and/or treatment plan
- Find and provide appropriate community resources to patients and their families

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- Provide effective communication with families and preceptor during patient visits and patient presentations
- Synthesis of appropriate work up and plan and how to convey anticipatory guidance to family
- Implement effective communication strategies between various members of the health care team
- Application of direct feedback from preceptor and family into the student's medial practice

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.

- Professional appearance and timely arrival to clinic
- Participate in non-judgemental and culturally sensitive discussions with families and staff
- Respectful and cognizent of HIPPA and patient privacy
- Understanding and application of confidentiality, especially with Adolescent patients

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

- Understanding of the components of the medical home and how it functions
- Employ resources avaible within the patient centered medical home, such as care coordination, to enhance patient care

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: The student will participate in sick and well visits in the primary care office. The student will be responsible for all components of the visit (including history, physical examination, assessment/plan, and counseling) under the guideance of their faculty preceptor. Additionaly, the student and faculty will mutually agree upon a topic to be presented to office staff as a formal presentation prior to the end of the rotation. The student may participate in phone comunication with families, giving immunizations after training, and other procedures as opportunity arise at the discretion of their preceptor.

Required textbooks and articles: none

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☐ Other: Click here to enter information regarding how the student will receive formative feedback.

Summative evaluation: Click the box to agree to the statement below.

☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Name of Sponsoring Preceptor: Thomas Lacy, MD/Michelle Tellado, MD
Date: 4/18/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director_____ Date _____

Signature of Assistant Dean of Medical Education MKlapheke MD Date 5-13-19

Curriculum Committee Chair _____ Date 5-12-19

COM Dean _____ Date 5-17-19

College of Medicine - Grad Course Addition - MDE 8574 Introduction to Orthopaedic Surgery and Musculoskeletal Care

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:*	Grad Course Addition
College:*	College of Medicine
Unit / Department / College:*	College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:*	MDE 8574 Introduction to Orthopaedic Surgery and Musculoskeletal Care
Course Instructor (Must be Approved Graduate Faculty/Scholars):*	Charles Giangarra, MD
Department Chair Phone Number:*	407-266-1101
Dept Chair Email*	pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDE	**Number:*** 8574
Course Title:* Intro to Ortho Surgery and Musculoskeletal Care	
30 Character Abbreviation:* Intro to Ortho Surg/Musculo	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* The student will be exposed to a wide variety of musculoskeletal issues both acute and chronic. They will improve their physical diagnosis skills, learn the use of appropriate imaging options, and be involved in formulating a treatment plan and go to surgery with preceptor.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of the M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: **http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf**

Credit Hours:*	3-6
Instruction Time:*	40 hrs. per week
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40 per week
Variable Credit (0-99):	3-6

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☐ Odd Fall ☐ Even Fall ☐ Odd Spring ☐ Even Spring ☐ Odd Summer ☐ Even Summer ☑ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the rationale for adding this course?*	4th year medical students are required to complete 6 months of elective clinical rotations. This course will be one option. **Please not the course is offered as a 2 and 4 week course. 2-week sections are 3 credit hours, 4 week sections are 6 credit hours.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	24

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

Information from the official Schedule of Classes
Instructor and/or GTA contact information
Explicit, public description of the course
Student learning outcomes
Sequence of course activity
Assessment and grading procedures
Course Materials and Resources
Core policy statements

Academic integrity statement including definition(s) of and consequences

for academic misconduct

Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities
Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with actions to take in various types of emergencies
Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	

Effective Date
Lab Fee
CRSE_ID

☐Approved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE/ELECTIVE/ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 7/1/2019
Course Title: Introduction to Orthopaedic Surgery and Musculoskeletal Care
Department/Specialty: Orthopaedic Surgery
Brief Description (25 words maximum): The student will be exposed to a wide variety of musculoskeletal issues both acute and chronic. They will improve their physical diagnosis skills, learn the use of appropriate imaging options, and be involved in formulating a treatment plan and go to surgery with preceptor.

Primary Preceptor Supervising Students: Charles Giangarra MD
Office Location: UCF Health 3400 Quadrangle Blvd. Orlando 32817
Email: charles.giangarra@ucf.edu
Office Phone: 304-617-9687

Please indicate course type (select one): ☒M3 Clerkship Selective

☐M4 Clerkship Elective (4 wks) ☐M4 Clerkship Elective (2 wks) ☒M4 Clerkship Elective (2 or 4 wks)

☐M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** UCF Health 3400 Quadrangle Blvd. Orlando 32817
- **Reporting Time:** 8:00AM
- **Contact Person** (for information/ scheduling): Charles Giangarra MD or Maria Barreto
- **Contact Phone and e-mail:** 304-617-9687 charles.giangarra@ucf.edu or 407-882-4753, maria.barreto@ucf.edu.

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☐June ☒July ☒August ☒September ☒October ☒November ☐December ☒January ☒February ☒March ☒April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? Maximum of 2

Prerequisites (check all that apply):
☒Completion of M2 ☒Completion of M3 ☐Consent of Instructor
☒Completion of Core Clerkship in Sugery for fourth year elective ☐Other: Click here to enter text.

Length of program (weeks): 2 or 4 weeks
Estimated total contact hours/week: 50
Estimated % of time - Inpatient: 20%
Estimated % of time - Outpatient: 70%
Estimated % of time – Indirect contact time (independent study or online course work: 10%

Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week 10 **follow-ups/week** 5
On-call schedule: no call requirement
Weekend duties: occaisonally can cover an athletic event with preceptor but this is voluntary
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: not applicable
Describe the expected level of supervision of students by faculty and residents: Student will be supervised by proctor at all times. Mentorship model.

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of Orthopaedic Surgery and Musculoskletal Care.

- The rotation is hands-on, one on one with the preceptor. The student will be exposed to a wide variety on musculo-skeletal injuries and illnesses involving the bones, joints, and muscles in a broad spectrum of patients from pediatric to geriatric. These would include but not limited to sprains, strains, fractures, arthritis, back, and neck pain. The student will be expected to peform a history and physical exam on new patients and be involved in outlining a treatment plan.
- By the end of the rotation the student will have become more proficient in their history and physical diagnosis skills involving common problems involvong the extremities and back
- The students will be expected to perform two detailed case presentations in a four week rotation, and one in a two week rotation, including a current literature review with discussion of the pathology and treatment options. There may also be a short quiz at the end of the rotation as well on assigned reading topics.
- The goal of this rotation is to benefit not only students interested in orthopaedic surgery but those students interested in primary care who would like to improve their knowledge base in musculoskeletal care and learn when a referral to a specialist is indicated.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☐Other: Click here to enter text.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to muscculo-skeletal pathology, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:

- The medical student will recognize signs and symptoms of common musculoskeletal pathologies, develop treatment plans, learn the indications for surgery and what types of procedures are available for the given condition and how they are managed post op. They will learn when a consult with orthopaedic surgery is warranted. They will learn how to perform common office precedures like injecting a knee or shoulder, suture removal, and application of casts.

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.

- The student will be expected to research the current literature for the patients they are involved with. A reading list may be provided as well. There will be periodic meeting with precetor to discuss progress and outlines areas for improvement as needed.

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- The student will be initially observed taking a history and physical and presenting to preceptor and documenting their findings and how they relay the information and treatment plan to the patient and/or family. They will be observed during their interactions with ancillary staff as well.

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.

- Students will be expected to maintain a professional environment at all times including appearance and behavior. They need to be respectful, compassonate, empathetic, and recognize and be sensitive to the level of understanding of the wide variety of patients we encounter.

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

- The student will be expected to research the recent evidence-based literature on the pathology encountered and to ask pertinent questions regarding the treatment plan based on their readings. They need to be aware of the costs of their decisions regarding treatment plans so as to order the most cost effective tests and care as indicated.

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: The students will do one or two case presentations with literature review and present to the preceptor on that patient. When students are scheduled to the operating room the first case is usually at 730AM but will be allowed the time necessary to go Grand Rounds on Wednesdays. The students should arrive 30 minutes prior to the start of case to discuss with the preceptor the planned procedure. The student should have reviewed the patient's chart before coming to the OR, be familiar with the surgical anatomy that will be encountered, and have read at least one source describing the planned procedure.

Required textbooks and articles: 1. Am. Academy of Orthopaedic Surgeons, Essentials of Musculoskeletal Care, Fifth Edition. 2. Eltorai, etal. Orthopedic Surgery Clerkship, A Quick Reference Guide for Senior Medical Students, Springer Publishing, 2017.

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☐ Other: A short quiz may be given on assigned readings.

Summative evaluation: Click the box to agree to the statement below.

☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Name of Sponsoring Preceptor: Charles Giangarra MD

Date: 3/25/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director MKlephke MD for Surgery Date 3-26-19

Signature of Assistant Dean of Medical Education MKlephke MD Date 3-26-19

Curriculum Committee Chair [signature] Date 4-19-19

COM Dean [signature] Date 4.19.19

College of Medicine - Grad Course Addition - MDI 8459 Acting Internship in General Outpatient Pediatrics with Nursery

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:*	Grad Course Addition
College:*	College of Medicine
Unit / Department / College:*	College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:*	MDI 8459 Acting Internship in General Outpatient Pediatrics with Nursery
Course Instructor (Must be Approved Graduate Faculty/Scholars):*	Sharon Dicristofaro, MD
Department Chair Phone Number:*	407-266-1101
Dept Chair Email*	pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDI	**Number:*** 8459
Course Title:* Acting Internship in General Outpatient Pediatrics with Nursery	
30 Character Abbreviation:* AI in Gen Peds with Nursery	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* Daily rounding in Level I nursery and outpatient general pediatrics.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	1	1	1
(Formal) Instruction Time - Class Hours or Online Module, etc.	1	1	1
Lab / Studio / Field work	0	1	2
Out-of-Class (homework, course readings, group work, online posts, etc)	2	1	0
Total Course Engagement	3	3	3

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	6
Instruction Time:*	40 per week
Lab / Studio / Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40 per week
Variable Credit (0-99):	

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☐ Odd Fall ☐ Even Fall ☐ Odd Spring ☐ Even Spring ☐ Odd Summer ☐ Even Summer ☑ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	4th year medical students are required to complete 1 acting internship rotation. This will be one option.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	12

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion	

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with**

actions to take in various types of emergencies

Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

☐Approved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE/ELECTIVE/ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 4/18/2019
Course Title: Clinical Clerkship - General Outpatient Pediatrics with Nursery
Department/Specialty: Pediatrics
Brief Description (25 words maximum): Daily rounding in Level I nursery and outpatient general pediatrics

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Primary Preceptor Supervising Students: Sharon Dicristofaro, M.D.
Office Location: 7455 Pinemire Drive Oviedo, FL 32765
Email: for scheduling: michelle.tellado@nemours.org, while on rotation: Sharon.DiCristofaro@nemours.org
Office Phone: for scheduling: (407) 650-7033 [NCPC DTN], on rotation: (407) 542-1733 [NCPC OVI]

Please indicate course type (select one): ☐M3 Clerkship Selective ☐M3 Clerkship Elective

☐M4 Clerkship Elective (4 wks) ☐M4 Clerkship Elective (2 wks) ☐M4 Clerkship Elective (2 or 4 wks)

☒M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** NCPC Oviedo: 7455 Pinemire Drive Oviedo, FL 32765
- **Reporting Time:** 0800
- **Contact Person** (for information/ scheduling)**:** Dr Sharon Dicristofaro
- **Contact Phone and e-mail:** (407) 542-1733, Sharon.DiCristofaro@nemours.org

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☒June ☒July ☒August ☒September ☒October ☒November ☐December ☒January ☒February ☒March ☒April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? ONE (1)

Prerequisites (check all that apply):
☐Completion of M2 ☒Completion of M3 ☐Consent of Instructor
☐Completion of Core Clerkship in Click here to enter text. ☒Other: specific interest in pediatrics

Length of program (weeks): 2 or 4 weeks
Estimated total contact hours/week: 40-50
Estimated % of time - Inpatient: 40%
Estimated % of time - Outpatient: 50%
Estimated % of time – Indirect contact time (independent study or online course work: 10%
Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week ~3-5 in fants in nursery/~10 clinic patients per afternoon **follow-ups/week** ~5-10 nursery babies, prn as needed in clinic

On-call schedule: none; student will have option for supervised responsibilities for after hours newborn emergencies (sick or decompensating newborns and complicated deliveries)
Weekend duties: one weekend rounding
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: research and presentation on assigned topics
Describe the expected level of supervision of students by faculty and residents: The student will be responsible for all components of the visit (including history gathering, physical examination, assessment/plan, and counseling) under the guideance of their faculty preceptor. The student may participate in phone comunication with families, giving immunizations after training, and other procedures as opportunity arise at the discretion of their preceptor and under their direct supervision.

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of Pediatrics.

- This rotation will give the student a broad exposure to general pediatrics focusing on newborn nursery care and outpatient primary care. In the newborn nursery, the students will be exposed to routine newborn care and common neonatal illnesses such as hyperbilirubeiemia, suspected sepsis, and respiratory distress. In the outpatient clinic, the student will encounter a wide variety of acute and chronic illness, simple trauma/injury care, and well child care from 0-18 years with an emphasis on normal development, preventative medicine, and immunizations.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☒Other: The student will develop an understanding of the team approach to care delivery and appreciation of the contributions made by all members of the team.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to Pediatrics, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:

- Understanding and implementation of thorough and appropriate examination of newborn infants
- Applying the appropriate work up and management of common problems/illnesses encountered during the neonatal period
- Evaluation of patients presenting with common childhood illnesses with emphasis on infectious diseases
- Learning appropriate well child care and spplication of preventative
- Understanding and application of current immunization schedule and catch-up vaccine processes

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.

- Research and apply pediatric clinical guidelines for common newborn/pediatric illnesses
- Provide scholarly articles to support clinical decision making for work up and/or treatment plan
- Find and provide appropriate community resources to patients and their families

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- Provide effective communication with families and preceptor during rounds
- Synthesis of appropriate work up and plan and how to convey anticipatory guidance to family
- Implement effective communication strategies between various members of the health care team
- Application of direct feedback from preceptor and family into the student's medial practice

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.

- Professional appearance and timely arrival to clinic
- Participate in non-judgemental and culturally sensitive discussions with families and staff
- Respectful and cognizent of HIPPA and patient privacy
- Understanding and application of confidentiality, especially with Adolescent patients

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

- Understanding of the components of the medical home and how it functions
- Employ resources avaible within the patient centered medical home, such as care coordination, to enhance patient care

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: The student will participate in daily rounds in the nursery and see sick and well visits in the primary care office. The student will be responsible for all components of the visit (including history, physical examination, assessment/plan, and counseling) under the guideance of their faculty preceptor. Additionaly, the student and faculty will mutually agree upon a topic to be presented to office staff as a formal presentation prior to the end of the rotation. The student may participate in phone comunication with families, giving immunizations after training, and other procedures as opportunity arise at the discretion of their preceptor.

Required textbooks and articles: none

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☐ Other: Click here to enter information regarding how the student will receive formative feedback.

Summative evaluation: Click the box to agree to the statement below.

☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Name of Sponsoring Preceptor: Thomas Lacy, MD/Michelle Tellado, MD
Date: 4/18/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director _____ Date _____

Signature of Assistant Dean of Medical Education _____ Date 5-13-19

Curriculum Committee Chair _____ Date 5-17-19

COM Dean _____ Date 5.17.19

College of Medicine - Grad Course Addition - MDI 8550 Acting Internship in Clinical Ophthalmology

2020-2021 Graduate Course New

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner.

Course additions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Please note: If your proposal is for a new split level course, do not complete this form. Please complete the 2020-2021 Graduate Course Split-Level Class form.

Proposal Type:*	Grad Course Addition
College:*	College of Medicine
Unit / Department / College:*	College of Medicine M.D. Program

For the **Full Title** box below, please type the course information in the following format: Prefix, Course Number, and Title. For example: IDS 6000 Creative Education

Full Title:*	MDI 8550 Acting Internship in Clinical Ophthalmology
Course Instructor (Must be Approved Graduate Faculty/Scholars):*	Saad Shaikh, MD
Department Chair Phone Number:*	407-266-1101
Dept Chair Email*	pep@ucf.edu

Please Note: Originators of New Course Proposals are responsible for designating the new course number. Instructions can be found at https://graduatecouncil.ucf.edu/curriculum-committee/ The file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms

file is **Course Number Guide** in the Other Resources section of this webpage. New Course forms submitted with a 5/6/7 XXX designation will not be accepted.

Prefix:* MDI	**Number:*** 8550
Course Title:* Acting Internship in Clinical Ophthalmology	
30 Character Abbreviation:* AI in Clinical Ophthal	
Course Type:* ○ Graduate Course ◉ Medicine (MD) Course	
Course Description (25 word limit)* This rotation will provide greater exposure to diagnosis, management, and surgical treatment of clinical ophthalmology cases encompassing cornea, retina, glaucoma, and oculoplastic and reconstructive surgery.	
Grading Scheme:* Satisfactory / Unsatisfactory	
Prerequisite(s): Completion of M3 year	
Corequisite(s):	

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	**1**	**1**	**1**
(Formal) Instruction Time - Class Hours or Online Module, etc.	**1**	**1**	**1**
Lab / Studio / Field work	**0**	**1**	**2**
Out-of-Class (homework, course readings, group work, online posts, etc)	**2**	**1**	**0**
Total Course Engagement	**3**	**3**	**3**

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: **http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf**

Credit Hours:*	6
Instruction Time:*	40 per week
Lab/Studio/Field Work Hours:*	0
Out-of-Class Hours:*	0
Total Engagement Hours:*	40/week
Variable Credit (0-99):	

NOTE: In determining if a course is repeatable for credit, the concept is that the content is the same, but the student experience with that content will be different each time it is taken.

For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated.

Repeat for credit?*	○ Yes ◉ No
If yes, indicate the total times the course may be used toward completion of the degree.	

Term of Offering

When will the course be offered?*	☐ Odd Fall ☐ Even Fall ☐ Odd Spring ☐ Even Spring ☑ Odd Summer ☑ Even Summer ☐ Every Semester ☐ Occasional

Intended Utilization of Course

The course will be used primarily as:*	○ Required Course ◉ Elective Course

Materials and Supply Fee

New Materials and Supply Fees?*	○ Yes ◉ No

If yes, also complete the 2020-21 Graduate Materials and Supply Fee form.

Justification for Course Addition

What is the	

What is the rationale for adding this course?*	4th year medical students are required to complete 1 acting internship rotation. This will be one option.
What grad programs/tracks require or recommend this course for graduation?	
What will be the source of students?*	4th year medical students
What is the estimated annual enrollment?*	4

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail any discussions you have had or attach relevant documents like email threads in the Attachment List Section.

Detail Discussion	

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**
- **Assessment and grading procedures**
- **Course Materials and Resources**
- **Core policy statements**
  - **Academic integrity statement including definition(s) of and consequences for academic misconduct**
  - **Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities**
  - **Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with**

actions to take in various types of emergencies

Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check*	☑ I have completed all relevant parts of the form.
Attached*	☑ I have attached a course syllabus and rationale.
Support from involved units that no duplication exists	☐ Duplication support materials attached

Administration Use Only

Catalog Ownership:	
Course Type	
Status	○ Inactive-Hidden ○ Active-Visable

PeopleSoft

Academic Group	
Career	
Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	

ved by M3/M4 ☐Approved by COM Curriculum Committee ☐Approval status/edits relayed to primary preceptor

University of Central Florida
College *of* Medicine

SELECTIVE / ELECTIVE / ACTING-INTERNSHIP PROPOSAL FORM

Please complete entire form. All fields are required

Proposal Date: 6/24/2019
Course Title: Acting Internship in Clinical Ophthalmology
Department/Specialty: Department of Surgery/Ophthalmology
Brief Description (25 words maximum): This rotation will provide greater exposure to diagnosis, management, and surgical treatment of clinical ophthalmology cases encompassing cornea, retina, glaucoma, and oculoplastic and reconstructive surgery.

Primary Preceptor Supervising Students: Saad Shaikh M.D., M.B.A.
Office Location: UCF College of Medicine - Medical Education Building 6850 Lake Nona Blvd Suite 412B Orlando, Florida 32827
Email: saad.shaikh@ucf.edu
Office Phone: 407-266-1100

Please indicate course type (select one): ☐M3 Clerkship Selective

☐M4 Clerkship Elective (4 wks) ☐M4 Clerkship Elective (2 wks) ☐M4 Clerkship Elective (2 or 4 wks)

☒M4 Clerkship Acting-Internship (4 wks)

☐Other Click here to explain why your course does not align with the previous course choices.

Location:

- **Location to Report on first day:** Orlando VA Medical Center- Lake Nona 2nd Floor Ophthalmology Clinic, 3800 Veterans Way, Orlando, FL 32827
- **Reporting Time:** 8:00AM
- **Contact Person** (for information/ scheduling): Saad Shaikh M.D., M.B.A.
- **What facilities will you use for your clinical rotations:** 2nd Floor Ophthalmology Clinic and 3rd Floor OR
- **Contact Phone and e-mail:** Phone: 407-266-1105 (Kate Knowles); email: saad.shaikh@ucf.edu

Which blocks will this rotation be offered during the academic year? The typical M4 academic year is June 1 – April 30. Please select which months you can offer this course to students. We will verify this information on a yearly basis. ☒June ☒July ☒August ☒September ☐October ☐November ☐December ☐January ☐February ☐March ☐April

**Please note for M3 rotations the schedule is different. You will be contacted by one of the M3 coordinators regarding the M3 course schedule.*

What is the number of students per rotation block? 1 student per block

Prerequisites (check all that apply):
☒Completion of M2 ☒Completion of M3 ☐Consent of Instructor
☒Completion of Core Clerkship in 3rd Year ☐Other: Click here to enter text.

Length of program (weeks): 4 weeks
Estimated total contact hours/week: 50 hours/week
Estimated % of time - Inpatient: 30%
Estimated % of time - Outpatient: 60%

Estimated % of time – Indirect contact time (independent study or online course work: 10%
Estimated patient volume: What is the estimated number of patients/week for whom the student will have some responsibility, e.g., intakes/week 25/week **follow-ups/week** 25/week
On-call schedule: Out-of-house call, 1 week at a time; 2 total weeks/4 weeks
Weekend duties: Call as noted above
For non-patient care rotations, describe the typical learning activities and responsibilities of the student: N/A
Describe the expected level of supervision of students by faculty and residents: Students will primarily work with residents during the Ophthalmology clinic, Retina fellow for Retina clinic, and Attendings for Glaucoma, Cornea cases and surgeries. Students will write notes which will primarily be reviewed by the residents and attendings.

Goals of the Rotation: Specify the anticipated clinical conditions the student will encounter, and the clinical knowledge, and examination and procedural skills the student will be expected to learn: This rotation is designed to provide medical students with insights into the specialty of Ophthalmology.

1. The overall goal is for students to perform an ophthalmology-targeted history and physical exam techniques and receive greater exposure to the diagnosis, management and surgical correction of ocular diseases.

2. During this rotation, the student will learn to do the primary work-up for patients including intra-ocular pressure check, visual acuity, and pupillary examination, and improve ability to perform slit-lamp examinations, dilated fundus examinations, indirect ophthalmoscopy, and refraction.

3. Students will rotate through the general, retina, cornea, glaucoma, and oculoplastic clinics to receive a well-rounded experience on patient care and management in order to identify ophthalmologic emergencies and urgencies and learn the basic therapies that should be initiated prior to referral.

4. Students will have the opportunity to see multiple imaging techniques such as OCT, OPTOS, IVFA, outpatient laser procedures, and retinal injection treatments.

5. Opportunity to practice on the surgical simulator.

Learning Objectives: Please group these under the following headings:

Patient care: Click box to agree to statement below
☒The medical student is expected to provide patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, and treatment of disease.
☐Other: Click here to enter text.

Medical Knowledge: The medical student is expected to demonstrate medical knowledge relevant to Ophthalmology, as well as the application of this knowledge to patient care: The student will obtain and develop medical knowledge in the following areas:

- Learn the fundamentals of ocular diseases that manifest from systemic illnesses. This encompasses but is not limited to the cornea, retina, lens, anterior chamber, vitreous, and extraocular muscles.
- Learn and recognize the anatomy and physiology of the eye and surrounding structures.
- Recognize how to identify increased intra-ocular pressure and the pathophysiology of glaucoma along with treatment methods.

- Recognize differences between the different stages of cataracts, and the types of intra-ocular lenses.
- Understand exam techniques to look for inflammatory cells, and learn to determine basic uveitis, conjunctivitis and scleritis cases.
- Utilize appropriate diagnostic imaging studies to assist in diagnosis of ocular diseases.
- Learn how to read diagnostic images from IVFA, OCT, and OPTOS.
- Participate in Noon Conference each Monday, and Morbidity and Mortality meeting each month for further discussions.

Practice Based Improvement: The medical student is expected to be able to demonstrate the ability to investigate and evaluate their care of patients and to continuously improve care based on constant self-evaluation and life-long learning.

- Develop proficiency in measuring intra-ocular pressure check with tonometry and applanation. Determine visual acuity and pupillary function to work-up patients. Learn how to perform a slit-lamp exam to deduce ocular disease manifestation in different locations of the eye. Practice the dilated fundus exam and indirect ophthalmoscopy to adapt to visualizing the retina. Effectively and promptly document pertinent ocular information using appropriate terminology. Learn to perform refraction in clinic and post-operative patients with intra-ocular lenses. Use textbooks, video lectures, and noon conference to supplement clinic and OR days to continue to build opthalmology knowledge through repetition and visual aids.

Interprofessional and Communication Skills: The medical student is expected to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.

- Work effectively with the health care team in clinic and OR, including technicians, optometrists, office staff, OR staff, residents, fellow, and Attendings.
- Present all patients in a concise, organized, logical, and knowledgeable manner and show ability to gather accurate, essential information for each patient.
- Exhibit respect and care when interacting with the surgical team.
- Demonstrate honesty, reliability, and appropriate judgement through all interactions in clinic and OR.

Professionalism: The medical student is expected to demonstrate behaviors that reflect a commitment to continuous professional development, ethical practice, understanding and sensitivity to diversity and a responsible attitude toward their patient, their profession, and society.

- Demonstrate sensitivity and responsiveness to patients' concerns, culture, age, socioeconomic status, gender, disabilities, and family dynamics.
- Demonstrate a commitment to ethical principles in management of ocular diseases, confidentiality of patient information, and informed consent.
- Show accountability for actions and decisions.
- Demonstrate respect, and dedication to give the best patient care and developing life-long learning.

Systems Based Practice: The medical student is expected to demonstrate an awareness of and responsiveness to the larger context of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

- Appreciate the specific needs of the Veteran and geriatic population.
- Communicate with patient and families, under the supervision and guidance of the senior resident and attending.

Learning Activities: Specify the level of the student's clinical responsibilities, e.g., admissions, daily rounds, weekly conferences, case presentations, literature review, other projects: Student schedules for the 4-week rotation with be determined by Dr. Shaikh along with out-of-house call schedule. Each week will consist of general clinic, retina clinic and OR days. Students are expected to present to general clinic at 7AM after the first-day. In the first week, students will work to develop ocular work-up skills (pressure, pupil, visual acuity, and necessary drops) learning closely from technicians, and practice using the slit lamp and visualizing the eye with the residents via teaching scope during each patient examination. Students should plan to be in the OR once every week and should talk to the participating attending and resident for preparation for cases and start time. OR days can consist primarily of cataract surgeries, along with cornea, glaucoma, retina, and oculoplastic surgeries. During the first week, the student will start from working up a patient, practice slit-lamp examination skills, and refraction. Students will work in the retina and uveitis clinics to practice dilated fundus exams and indirect ophthalmoscopy. By the end of the 4th week, students should have an understanding of all the above physical exam maneuvers. Every Monday from 12:30PM – 2PM is Noon Conference led by Dr. Shaikh. Each month there is a Morbidity and Mortality conference. Students are required to participate in all conferences.

Required textbooks and articles: No required readings for this course. The following resources are highly recommended for this rotation and most are available online by the UCF College of Medicine library. Highly Recommended Resources: 1. http://www.ophthobook.com for chapter and corresponding lecture videos. 2. The Massachusetts Eye and Ear Infirmary Illustrated Manual of Ophthalmology 4th Edition by Kaiser, Friedman, and Pineda, 3. Kanski's Synopsis of Clinical Ophthalmology 3 edition. For further resources: 1. Kanski's Clinical Ophthalmology, 2. Kanski's Signs in Ophthalmology: Causes and Differential Diagnosis.

How will the student's performance be assessed?

How/when will formative feedback be given?: Click box to agree to the statement below.

☒ The medical student will be evaluated by his/her engagement in the entire learning opportunity including presentations, preparedness for clinic, and participation in educational conferences. There will be a formal feedback session at mid-term and at the end of the rotation. Feedback for continuous improvement will be provided throughout the rotation.

☐ Other: Click here to enter information regarding how the student will receive formative feedback.

Summative evaluation: Click the box to agree to the statement below.

☒ A final written evaluation will be provided at the end of the rotation. All evaluations will be completed electronically via an online evaluation system.

☐ Other: Click here to enter information regarding how the student will receive a summative evaluation.

Name of Sponsoring Preceptor: Saad Shaikh M.D., M.B.A.
Date: 6/24/2019

* Email the completed form to ken.staack@ucf.edu as a **word document**. We will reach out to you if we need additional information and to inform you of the status of your course proposal.

Signature of Clerkship Director _____ Date _____

Signature of Assistant Dean of Medical Education JM Klapheke MD Date 7-8-19

Curriculum Committee Chair _____ Date 7-19-19

COM Dean _____ Date 7/19/19

College of Optics and Photonics - Graduate Program Revision - Optics and Photonics MS

2020-2021 Graduate Program Revision/Reactivation

General Catalog Information

This form is to be used to REVISE graduate degree programs, tracks, or certificate programs. If there are tracks being revised or added to a program, one form must be submitted for EACH program and the track(s).

Please refer to the Graduate Council Curriculum Meeting Schedule for submission deadlines.

Select *Program* below.

Program Type:* (•) Program ( ) Shared Core

Proposal Type:* Graduate Program Revision

Read before you begin

TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

IMPORT curriculum data from the Catalog by clicking in the top left corner.
FILL IN all fields required marked with an * after importing data. You will not be able to launch the proposal without completing required fields.

LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. Changes will only be tracked after proposal is launched.

College:* College of Optics and Photonics

Unit / Department / College:* College of Optics and Photonics

Unit(s) Housing Program:

Type of Action:* [x] Program

☐ Track

☐ Certificate

IMPORT PROGRAM NOW! Please use the Import feature to import the program information from the Catalog by clicking in the top left corner of the form.

Name of program, track and / or certificate:*	Optics and Photonics MS
Are you revising the name of the program, track, or certificate?*	○ Yes ◉ No
Proposed Effective Term / Year:*	Fall 2020
If you will be submitting other revision forms for tracks or course actions, please list them here:	Optics and Photonics MS - Optics Track Optics and Photonics MS - Photonics Track
Is the CIP code being updated?	☐ Yes ☑ No
If yes, please provide the new CIP code:	
Rationale for revision:	The Department Curriculum Committee has voted to allow a student to substitute OSE 6536 Semiconductor Lasers for the OSE 5525 Laser Engineering class to satisfy the core course requirement

Complete the remaining required fields and LAUNCH this proposal! Do not begin revisions until **after** launch. Program revisions before launch will not be tracked.

Informational Description Chart- this will import.*

College: Optics and Photonics	**Degree:** MS
Program Websites: http://www.creol.ucf.edu/	**Option:** Thesis, Nonthesis
Graduate Program Handbook	

Revise catalog copy here! After you revise courses, click on the Curriculum Schema button below to revise the catalog copy. Please note: this information is what will flow directly to the graduate catalog. Any attached documents to this proposal will not be used for catalog purposes.

Follow these steps to propose courses to the revised program curriculum:

Step 1

There are two options for adding courses: "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculog Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.

Step 2

Click on "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 1. Select the courses you wish to add. For removing courses click on the and proceed.

Prospective Curriculum *

Program Description

The Master of Science in Optics and Photonics program is intended for students with a bachelor's degree in optics, electrical engineering, physics, or closely related fields. The program is interdisciplinary and combines optical science and engineering.

The College of Optics and Photonics offers an interdisciplinary graduate program in optical science and engineering leading to a Master of Science in Optics and Photonics. The college has grown rapidly and now has 55 faculty members and faculty with joint appointments, 41 research scientists and 148 graduate students with research activities covering all aspects of optics, photonics, and lasers. Research expenditures are over $10 million annually, with over 20 percent of the funding coming from industrial partners, illustrating the effectiveness of the commitment to partnerships that is a foundational value of the COP.

Research activities cover all aspects of optics, photonics, and lasers, and the Center for Research and Education in Optics and Lasers (CREOL), the Florida Photonics Center of Excellence (FPCE), and the Townes Laser Institute (TLI) are integral parts of the College. Current research areas include: linear and nonlinear guided-wave optics and devices, high speed photonic telecommunications, fiber optic fabrication, fiber optic communications, solid state laser development, nonlinear optics, laser-induced damage, quantum-well optoelectronics, quantum optics, photonic information processing, infrared systems, optical diagnostics, optical system design, image analysis, virtual reality, medical imaging, diffractive optics, optical crystal growth and characterization, high intensity lasers, X-ray optics, EUV sources, optical glasses, laser materials processing, free-electron lasers, and light matter interaction.

The MS program is intended for students with a bachelor's degree in optics, electrical engineering, physics, or closely related fields. The program's mission is to:

Provide the highest quality education in optical science

Provide the highest-quality education in optical science and engineering

Conduct scholarly, fundamental, and applied research
Aid in the development of Florida's and the nation's technology-based industries

Program Tracks

Optics and Photonics MS, International Track
Optics and Photonics MS, Optics Track
Optics and Photonics MS, Photonics Track

Curriculum

The Optics and Photonics MS program (No Track) requires a minimum of 30 credit hours beyond the bachelor's degree. The program offers a thesis and nonthesis option. Students are allowed considerable freedom in planning their study programs, although some foundation Optics courses are strongly recommended as core courses and two research methods/laboratory courses are required.

Total Credit Hours Required: 30 Credit Hours Minimum beyond the Bachelor's Degree

Additional notes on the curriculum:

A minimum of 24 credit hours of formal graduate courses is required in the thesis option of which at least 12 credit hours must be formal Optics (prefix OSE) courses. A minimum of 27 credit hours of formal graduate courses is required in the nonthesis option of which at least 18 credit hours must be formal Optics (prefix OSE) courses. The remaining credit hours can be a thesis or other elective and research courses as permitted in the option.
At least 6 credit hours of approved optics or related science and engineering research methods/laboratory courses are required in both options. At least one must be in Optics or approved as an Optics substitute.
Up to nine credit hours of appropriate graduate courses from accredited universities may be transferred with approval from the College of Optics and Photonics. Only courses with grades of "B" or better can be transferred.

Required Courses: 15 Credit Hours

Core: 9 Credit Hours

The following foundation courses are required.

OSE 5115 Interference and Diffraction
OSE 6111 Optical Wave Propagation
OSE 5525 Laser Engineering
[Right] OSE 6536 Semiconductor Lasers may be used as a substitute for OSE 5525 Laser Engineering

Research Methods/Laboratory: 6 Credit Hours

At least 6 credit hours of approved Optics and related science/engineering research methods/laboratory courses are required from the list below. At least one must be in Optics (OSE). One required laboratory may be waived if the student can demonstrate an equivalent hands-on proficiency in that laboratory specialization. These research methods/laboratory courses count toward the formal graduate course work requirement.

OSE 6234C Applied Optics Laboratory
OSE 6455C Photonics Laboratory
OSE 6526C Laser Engineering Laboratory
OSE 6615L Optoelectronic Device Fabrication Laboratory
[After] Other graduate-related science and engineering methodology labs may be taken with approval by the College of Optics and Photonics.

Elective Courses: 9 Credit Hours

All students are required to take a minimum of 9 credit hours of electives.

Other courses with significant optics content may be accepted towards the Optics (OSE) course work requirement, upon approval by the Associate Dean.

A listing and description of courses offered by the College of Optics and Photonics is found in the "Courses" section.

Comprehensive Examination

An oral master's comprehensive examination, based on the core courses (OSE 5115 Interference, Diffraction and Coherence, OSE 6111 Optical Wave Propagation, and OSE 5525 Laser Engineering) must be passed as a graduation requirement for the MS degree in Optics and Photonics. Students will be required to take this exam within one semester after completing the core courses.

The exam may be taken twice. After failing on the second attempt, the student will be required to re-take the courses covering the areas in which the examination committee determined the student to be deficient. The retaken courses must be passed with a minimum grade of B+ in order for the student to graduate.

This Comprehensive Examination requirement may be satisfied by passing the Optics and Photonics PhD Qualifying exam.

Thesis Option: 6 Credit Hours

The thesis option requires at least 6 credit hours of thesis research.

Independent study and directed research credit hours are not allowed toward the degree requirements. The student must prepare an approved program of study and form a thesis committee upon completion of nine credit hours. The MS thesis committee consists of three members, with at least two regular graduate faculty members from the College of Optics and Photonics. Students are required to write a thesis and pass an oral exam based primarily on the topics of the thesis and course work.

OSE 6971 - Thesis 6 Credit Hours

Nonthesis Option: 6 Credit Hours

The nonthesis option requires an additional 6 credit hours of electives.

Up to 3 credit hours of directed research (OSE 6918) or research report (OSE 6909) may be included as electives with prior approval of the

College of Optics and Photonics although they are not counted toward the required 27 credit hours of formal coursework. Students must prepare an approved plan of study upon completion of nine credit hours.

The research report is a written report on a subject based on research completed under the guidance of a faculty advisor who is a member of the graduate faculty in the College of Optics and Photonics. The subject matter will be determined by advisor and should be on some aspect of experimental, theoretical, or literature research in the area of optics and photonics. Normally the research and report should be completed within one semester. The written report should contain between 5,000 and 10,000 words and should roughly follow the format of a scientific journal paper. The report will be evaluated by a committee consisting of the advisor and two other faculty members. The student will be expected to present a brief oral presentation of the work to the committee, not less than 5 business days after submitting the written report to the committee and prior to the last day of classes in the semester. The report will be graded on a satisfactory/unsatisfactory basis by the advisor, based on the input from the committee.

The nonthesis master's requires a minimum of two methods/laboratory courses as described above. These laboratory courses involve a substantial amount of independent learning on the part of the student. For example, laboratory reports must include sections on the theoretical and historical background behind the phenomena explored in laboratory experiments, and students are expected to obtain this background information on their own by researching the scientific literature. One required Optics laboratory may be waived if the student can demonstrate an equivalent hands-on proficiency in that laboratory specialization. These methodology/laboratory courses count toward the formal coursework requirement.

Electives 6 Credit Hours

Independent Learning

All students must take a minimum of two graduate methodology/laboratory courses in Optics or a closely related field that include experiments, research and laboratory reports. Nonthesis students also engage in directed research or research report. Thesis students enroll in 6 hours of thesis credits during the completion of their research study.

Application Requirements

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline.

In addition to the general UCF graduate application requirements, applicants to this program must provide:

One official transcript (in a sealed envelope) from each college/university attended.
A bachelor's degree in Optics, Electrical Engineering, Physics, or closely related fields.
A GRE score taken is not required for admission to the Optics and Photonics MS program.
Goal Statement: Please choose the Personal Statement option. Your Personal statement should describe your career goals. Please include why you want to come to CREOL and how the MS will help you achieve your ultimate career goals.
Three letters of recommendation.
Résumé.
Applicants applying to this program who have attended a college/university outside the United States must provide a credential evaluation showing an equivalent bachelor's degree in the U.S. A course-by-course evaluation must be provided, with a GPA calculation. Credential evaluations are accepted from World Education Services (WES) or Josef Silny and Associates, Inc. only.

Students with degrees in related fields may be required to take undergraduate articulation courses determined by the program director on a case-by-case basis.

Application Deadlines

Optics and Photonics MS	*Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 1	Dec 1	Apr 1
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
*Applicants who plan to enroll full time in a degree program and who wish to be considered for university fellowships or assistantships should apply by the Fall Priority date.				

Financials

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see the College of Graduate Studies Funding website, which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The Financial Information section of the Graduate Catalog is another key resource.

Fellowships

Fellowships are awarded based on academic merit to highly qualified students. They are paid to students through the Office of Student Financial Assistance, based on instructions provided by the College of Graduate Studies. Fellowships are given to support a student's graduate study and do not have a work obligation. For more information, see UCF Graduate Fellowships, which includes descriptions of university fellowships and what you should do to be considered for a fellowship.

Contact Info

Graduate Program

David Hagan PhD

Associate Dean

hagan@creol.ucf.edu

Telephone: 407-823-6817

CROL 231

Alma Montelongo

gradprog@creol.ucf.edu

Telephone: 407-823-4726

CREOL Room 208

Graduate Admissions

Ashley Rivera Mercado

gradadmissions@ucf.edu

Telephone: 407-823-2766

Millican Hall 230

Online Application

Graduate Admissions

Mailing Address

UCF College of Graduate Studies

Millican Hall 230

PO Box 160112

Orlando, FL 32816-0112

Institution Codes

GRE: 5233

GMAT: RZT-HT-58

TOEFL: 5233

ETS PPI: 5233

Graduate Fellowships

Grad Fellowships

Telephone: 407-823-0127

gradfellowship@ucf.edu

https://funding.graduate.ucf.edu

Graduate Financial Aid

UCF Student Financial Assistance

Millican Hall 120

Telephone: 407-823-2827

Appointment Line: 407-823-5285

Fax: 407-823-5241

finaid@ucf.edu

http://finaid.ucf.edu

Impact on Current Students

Will students be moved from an existing program, track, or certificate into this revised program, track, or certificate?*	○ Yes ◉ No
If yes, state the name of the program or track where students are currently enrolled and attach a list of students if possible:	
Will students have the option to stay in their existing program, track, or certificate?*	◉ Yes ○ No
If yes, how will current students be impacted by this change?	There is no impact to students

Future Students

Provide a statement of who is likely to enroll and why. Please state if there is licensure or certification that depends upon this education, etc.	All students will have the option to take the core course OSE 5525 or the more advanced course OSE 6536

Year 1

Headcount:	SCHs:

Year 2

Headcount:	**SCHs:**

Year 3

Headcount:	**SCHs:**

Indicate likely career or student outcomes upon completion:	

Please complete the following section on financial support:

(Specify all forms of support – assistantships, fellowships, and tuition remission.)

Year 1

Number of assistantship students:	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Year 2

Number of assistantship students	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Year 3

Number of assistantship students:	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Attachments

Please attach the required files by navigating to the Proposal Toolbox and clicking in the top right corner of the form.

Faculty List*	(•) Attached ( ) Not Applicable
Support from involved units that no duplication exists*	( ) Attached (•) Not Applicable

Administration Use Only

Catalog Ownership:	College of Optics and Photonics
Program OID	7866
Program Type	Master
Degree Type	Master of Science
Status*	(•) Active-Visible ( ) Inactive-Hidden

Current Faculty List and Contact Information

Dr. Ayman Abouraddy
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CREOL A116 407-823-6809 raddy@creol.ucf.edu

Dr. Rodrigo Amezcua Correa
Assistant Professor of Optics & Photonics
CREOL A118 407-823-6853 r.amezcua@creol.ucf.edu

Dr. Luca Argenti
Assistant Professor of Physics, Optics & Photonics
PSB 304 (+1) 407-823-0780 luca.argenti@ucf.edu

Dr. Zenghu Chang
University Trustee Chair, Pegasus and Distinguished Professor of Physics, Optics & Photonics
PS464 407-823-4442 Zenghu.Chang@ucf.edu

Dr. Demetrios Christodoulides
Pegasus Professor of Optics & Photonics/Cobb Family Endowed Chair
CREOL 210 407-882-0074 demetri@creol.ucf.edu

Dr. Peter J. Delfyett
University Trustee Chair & Pegasus Professor of Optics & Photonics, ECE & Physics; Director, Townes Laser Institute
CREOL 272 407-823-6812 delfyett@creol.ucf.edu

Dr. Dennis Deppe
FPCE Endowed Chair & Professor of Optics & Photonics
CREOL A121 407-823-6870 ddeppe@creol.ucf.edu

Dr. Aristide Dogariu
Pegasus Professor of Optics & Photonics/FPCE
CREOL 164 407-823-6839 adogariu@creol.ucf.edu

Dr. Ronald Driggers
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Dr. Leonid B. Glebov
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Dr. David J. Hagan
Associate Dean for Academic Programs & Pegasus Professor of Optics & Photonics, Physics
CREOL 209 407-823-6817 hagan@creol.ucf.edu

Dr. Kyu Young Han
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Dr. Aravinda Kar
Professor of Optics & Photonics, MMAE, ECE and Physics
CREOL 284 407-823-6921 akar@creol.ucf.edu

Dr. Mercedeh Khajavikhan
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CREOL 275 407-823-6829 mercedeh@creol.ucf.edu

Dr. Pieter G. Kik
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CREOL 270 407-823-4622 kik@creol.ucf.edu

Dr. Stephen Kuebler
Associate Professor of Chemistry, Optics & Photonics
Phys Sciences 347 407-823-3720 Stephen.Kuebler@ucf.edu

Dr. Guifang Li
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College of Optics and Photonics - Graduate Program Revision - Optics and Photonics MS, Photonics Track

2020-2021 Graduate Program Revision/Reactivation

General Catalog Information

This form is to be used to REVISE graduate degree programs, tracks, or certificate programs. If there are tracks being revised or added to a program, one form must be submitted for EACH program and the track(s).

Please refer to the Graduate Council Curriculum Meeting Schedule for submission deadlines.

Select *Program* below.

Program Type:* (•) Program ( ) Shared Core

Proposal Type:* Graduate Program Revision

Read before you begin

TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

IMPORT curriculum data from the Catalog by clicking in the top left corner.
FILL IN all fields required marked with an * after importing data. You will not be able to launch the proposal without completing required fields.

LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. Changes will only be tracked after proposal is launched.

College:* College of Optics and Photonics

Unit / Department / College:* College of Optics and Photonics

Unit(s) Housing Program:

Type of Action:* ☐ Program

☑ Track

☐ Certificate

IMPORT PROGRAM NOW! Please use the Import feature to import the program information from the Catalog by clicking in the top left corner of the form.

Name of program, track and / or certificate:*	Optics and Photonics MS, Photonics Track
Are you revising the name of the program, track, or certificate?*	○ Yes ◉ No
Proposed Effective Term / Year:*	Fall 2020
If you will be submitting other revision forms for tracks or course actions, please list them here:	Other forms already in process are: Optics and Photonics - PhD Optics and Photonics - MS Optics and Photonics - MS Optics Track
Is the CIP code being updated?	☐ Yes ☑ No
If yes, please provide the new CIP code:	
Rationale for revision:	The Department Graduate Curriculum Committee has voted to allow a student to substitute OSE 6536 Semiconductor Lasers for the OSE 5525 Laser Engineering class to satisfy the core course requirement.

Complete the remaining required fields and LAUNCH this proposal! Do not begin revisions until **after** launch. Program revisions before launch will not be tracked.

Informational Description Chart- this will import.*

College: Optics and Photonics	**Degree:** MS
Program Websites: http://www.creol.ucf.edu/	**Option:** Thesis, Nonthesis

Revise catalog copy here! After you revise courses, click on the Curriculum Schema button below to revise the catalog copy. Please

note: this information is what will flow directly to the graduate catalog.

Any attached documents to this proposal will not be used for catalog purposes.

Follow these steps to propose courses to the revised program curriculum:

Step 1

There are two options for adding courses: "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculog Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.

Step 2

Click on "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 1. Select the courses you wish to add. For removing courses click on the and proceed.

Prospective Curriculum*	

Impact on Current Students

Will students be moved from an existing program, track, or certificate into this revised program, track, or certificate?*	○ Yes ◉ No
If yes, state the name of the program or track where students are currently enrolled and attach a list of students if possible:	
Will students have the option to stay in their existing program, track, or certificate?*	◉ Yes ○ No
If yes, how will current students be impacted by this change?	No Impact to students

Future Students

Future Students

Provide a statement of who is likely to enroll and why. Please state if there is licensure or certification that depends upon this education, etc.	

Year 1

Headcount:	**SCHs:**

Year 2

Headcount:	**SCHs:**

Year 3

Headcount:	**SCHs:**

Indicate likely career or student outcomes upon completion:	

Please complete the following section on financial support:

(Specify all forms of support – assistantships, fellowships, and tuition remission.)

Year 1

Number of assistantship students:	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Year 2

Number of assistantship students	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Year 3

Number of assistantship students:	**Source of funds:**
Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Attachments

Please attach the required files by navigating to the Proposal Toolbox and clicking in the top right corner of the form.

Faculty List*	(•) Attached ( ) Not Applicable
Support from involved units that no duplication exists*	( ) Attached (•) Not Applicable

Administration Use Only

Catalog Ownership:	College of Optics and Photonics
Program OID	7869
Program Type	Master
Degree Type	Master of Science
Status*	(•) Active-Visible ( ) Inactive-Hidden

College of Optics and Photonics - Graduate Program Revision - Optics and Photonics MS, Photonics Track

Track Description

The Photonics Track in the Optics and Photonics MS program is intended for students with a bachelor's degree in optics, electrical engineering, physics, or closely related fields. The program is interdisciplinary and combines optical science and engineering.

Curriculum

The Photonics Track in the Optics and Photonics MS program requires a minimum of 30 credit hours beyond the bachelor's degree. The program offers thesis and nonthesis options. Students are allowed some freedom in planning their study programs, although some foundation Optics courses are strongly recommended as core courses and one research methods/laboratory course is required.

Total Credit Hours Required: 30 Credit Hours Minimum beyond the Bachelor's Degree

Additional notes on the curriculum:

- A minimum of 24 credit hours of formal graduate courses is required in the thesis option, of which at least 12 credit hours must be formal Optics (prefix OSE) courses. A minimum of 27 credit hours of formal graduate courses is required in the nonthesis option, of which at least 18 credit hours must be formal Optics (prefix OSE) courses. The remaining credit hours can be a thesis or other elective and research courses as permitted in the option.
- At least 3 credit hours of an approved optics methods/laboratory course is required in both options.
- An OSE 6909 Research Report of 3 credit hours is required in the nonthesis option.
- Up to 9 credit hours of appropriate graduate courses from accredited universities may be transferred with approval from the College of Optics and Photonics. Only courses with grades of "B" or better can be transferred.

Required Courses: 21 Credit Hours

Core: 18 Credit Hours

OSE 5414 Fundamentals of Optoelectronic Devices

OSE 5115 Interference and Diffraction

OSE 6111 Optical Wave Propagation

OSE 5525 Laser Engineering

OSE 6421 Integrated Photonics

OSE 6474 Fundamentals Optical Fiber Communications

[Right]

OSE 6536 Semiconductor Lasers maybe used as a substitute for OSE 5525 Laser Engineering

Research Methods/Laboratory: 3 Credit Hours

At least 3 credit hours of approved Optics and related science/engineering research methods/laboratory courses is required from the list below. These research methods/laboratory courses count toward the formal graduate course work requirement.

OSE 6455C Photonics Laboratory

OSE 6615L Optoelectronic Device Fabrication Laboratory

[After] Other graduate-related science and engineering methodology labs may be taken with approval by the College of Optics and Photonics.

Elective Courses: 6 Credit Hours

All students are required to take a minimum of 3 credit hours of electives.

Other courses with significant optics content may be accepted toward the Optics (OSE) coursework requirement, upon approval by the Associate Dean.

A listing and description of courses offered by the College of Optics and Photonics is found in the "Courses" section.

Thesis Option: 6 Credit Hours

The thesis option requires at least 6 credit hours of thesis resarch.

Independent study and directed research credit hours are not allowed toward the degree requirements. The student must prepare an approved plan of study and form a thesis committee upon completion of 9 credit hours. The MS thesis committee consists of three members, with at least two regular graduate faculty members from the College of Optics and Photonics. Students are required to write a thesis and pass an oral exam based primarily on the topics of the thesis and course work.

- OSE 6971 - Thesis **6 Credit Hours**

Nonthesis Option: 6 Credit Hours

The nonthesis option requires an additional 6 credit hours of courses or electives.

Up to 3 credit hours of Research Report (OSE 6909) will be included.

For students in a non-thesis option, a Research Report may be completed in the last term of study. The Optics or Photonics Masters tracks require a research report in the non-thesis option, but this is optional in the general MS degree.

The research report is a written report on a subject based on research completed under the guidance of a faculty advisor who is a member of the graduate faculty in the College of Optics and Photonics. The subject matter will be determined by advisor and should be on some aspect of experimental, theoretical, or literature research in the area of optics and photonics. Normally the research and report should be completed within one semester. The written report should contain between 5,000 and 10,000 words and should roughly follow the format of a scientific journal paper. The report will be evaluated by a committee consisting of the advisor and two other faculty members. The student will be expected to present a brief oral presentation of the work to the committee, not less than 5 business days after submitting the written report to the committee and prior to the last day of classes in the semester. The report will be graded on a satisfactory/unsatisfactory basis by the advisor, based on the input from the committee.

Students must select an adviser from the College of Optics and Photonics Faculty to serve on their Research Report. Students must prepare an approved plan of study upon completion of 9 credit hours. Students are required to pass a final oral comprehensive examination based primarily on the subject matter of the courses taken. The purpose of the exam is for the student to demonstrate his or her basic knowledge of the fundamentals of optics and photonics.

- OSE 6909 - Research Report **3 Credit Hours**
- Elective course **3 Credit Hours**

Comprehensive Examination

An oral master's comprehensive examination, based on the core courses (OSE 5115 Interference, Diffraction and Coherence, OSE 6111 Optical Wave Propagation, and OSE 5525 Laser Engineering) must be passed as a graduation requirement for the MS degree in Optics and Photonics. Students will be required to take this exam within one semester after completing the core courses.

The exam may be taken twice. After failing on the second attempt, the student will be required to re-take the courses covering the areas in which the examination committee determined the student to be deficient. The retaken courses must be passed with a minimum grade of B+ in order for the student to graduate.

This Comprehensive Examination requirement may be satisfied by passing the Optics and Photonics Ph.D. Qualifying exam.

Independent Learning

Students must demonstrate independent learning by either writing a thesis or a research report. Additionally, all students must take a minimum of one graduate methodology/laboratory course in Photonics or a closely related field that includes experiments, research and laboratory reports.

Application Requirements

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline.

In addition to the general UCF graduate application requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Optics, Electrical Engineering, Physics, or closely related fields.
- A GRE score is not required for admission to the Optics and Photonics MS Program (PhotonicsTrack).
- Goal Statement: Please choose the Personal Statement option. Your Personal statement should describe your career goals. Please include why you want to come to CREOL and how the MS will help you achieve your ultimate career goals.
- Three letters of recommendation.
- Résumé.
- Applicants applying to this program who have attended a college/university outside the United States must provide a credential evaluation showing an equivalent bachelor's degree in the U.S. A course-by-course evaluation must be provided, with a GPA calculation. Credential evaluations are accepted from World Education Services (WES) or Josef Silny and Associates, Inc. only.

Students with degrees in related fields may be required to take undergraduate articulation courses determined by the program director on a case-by-case basis.

Application Deadlines

Photonics	***Fall Priority**	**Fall**	**Spring**	**Summer**
Domestic Applicants	Jan 15	Jul 1	Dec 1	Apr 1
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
*Applicants who plan to enroll full time in a degree program and who wish to be considered for university fellowships or assistantships should apply by the Fall Priority date.				

Financials

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see the College of Graduate Studies Funding website, which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The Financial Information section of the Graduate Catalog is another key resource.

Fellowships

Fellowships are awarded based on academic merit to highly qualified students. They are paid to students through the Office of Student Financial Assistance, based on instructions provided by the College of Graduate Studies. Fellowships are given to support a student's graduate study and do not have a work obligation. For more information, see UCF Graduate Fellowships, which includes descriptions of university fellowships and what you should do to be considered for a fellowship.

Contact Info

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CROL 231

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CREOL Room 208

Graduate Admissions

Ashley Rivera Mercado

gradadmissions@ucf.edu

Telephone: 407-823-2766

Millican Hall 230

Online Application

Graduate Admissions

Mailing Address

UCF College of Graduate Studies

Millican Hall 230

PO Box 160112

Orlando, FL 32816-0112

Institution Codes

GRE: 5233

GMAT: RZT-HT-58

TOEFL: 5233

ETS PPI: 5233

Graduate Fellowships

Grad Fellowships

Telephone: 407-823-0127

gradfellowship@ucf.edu

https://funding.graduate.ucf.edu

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UCF Student Financial Assistance

Millican Hall 120

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Appointment Line: 407-823-5285

Fax: 407-823-5241

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http://finaid.ucf.edu

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College of Optics and Photonics - Optics and Photonics PhD

2020-2021 Graduate Program Revision/Reactivation

General Catalog Information

This form is to be used to REVISE graduate degree programs, tracks, or certificate programs. If there are tracks being revised or added to a program, one form must be submitted for EACH program and the track(s).

Please refer to the Graduate Council Curriculum Meeting Schedule for submission deadlines.

Select *Program* below.

Program Type:* ○ Program ◉ Shared Core

Proposal Type: Graduate Program Revision

Read before you begin

TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

IMPORT curriculum data from the Catalog by clicking in the top left corner.
FILL IN all fields required marked with an * after importing data. You will not be able to launch the proposal without completing required fields.

LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. Changes will only be tracked after proposal is launched.

College:* College of Optics and Photonics

Unit / Department / College:* College of Optics and Photonics

Unit(s) Housing Program:

Type of Action:* ☑ Program ☐ Track

☐ Certificate

IMPORT PROGRAM NOW! Please use the Import feature to import the program information from the Catalog by clicking in the top left corner of the form.

Name of program, track and / or certificate:*	Optics and Photonics PhD
Are you revising the name of the program, track, or certificate?*	○ Yes ◉ No
Proposed Effective Term / Year:*	Fall 2020
If you will be submitting other revision forms for tracks or course actions, please list them here:	Optics and Photonics MS Optics and Photonics MS - Optics Track Optics and Photonics MS - Photonics Track
Is the CIP code being updated?	☐ Yes ☑ No
If yes, please provide the new CIP code:	
Rationale for revision:	**The Department Graduate Curriculum Committee has voted to allow a student to substitute OSE 6536 Semiconductor Lasers for the OSE 5525 Laser Engineering class to satisfy the core course requirement.**

Complete the remaining required fields and LAUNCH this proposal! Do not begin revisions until **after** launch. Program revisions before launch will not be tracked.

Informational Description Chart- this will import.*

College: Optics and Photonics	**Degree:** PhD
Program Websites: http://www.creol.ucf.edu/	**Option:** Dissertation
Graduate Program Handbook	

Revise catalog copy here! After you revise courses, click on the Curriculum Schema button below to revise the catalog copy. Please note: this information is what will flow directly to the graduate catalog. Any attached documents to this proposal will not be used for catalog purposes.

Follow these steps to propose courses to the revised program curriculum:

Step 1

There are two options for adding courses: "Add Course" and "Import Course." For courses already in the catalog, click on "Import Course" and find the courses needed. For new classes going through a Curriculog Approval Process click on "Add Course"-- a box will open asking you for the Prefix, Course Number and Course Title.

Step 2

Click on "View Curriculum Schema." Click on the area/header of the program where you would like to add courses. When you click on "Add Courses" it will bring up the list of courses available from Step 1. Select the courses you wish to add. For removing courses click on the and proceed.

Prospective Curriculum*	

Impact on Current Students

Will students be moved from an existing program, track, or certificate into this revised program, track, or certificate?*	○ Yes ◉ No
If yes, state the name of the program or track where students are currently enrolled and attach a list of students if possible:	
Will students have the option to stay in their existing program, track, or certificate?*	◉ Yes ○ No
If yes, how will current students be impacted by this change?	**There is no impact to students**

Future Students

Provide a statement of who is likely to enroll and why. Please	**All students ~~future students~~ will have the option to take the core course OSE 5525 or the more advanced course OSE 6536~~. It will depend upon the type of research that the student plans to complete~~.**

State if there is licensure or certification that depends upon this education, etc.	

Year 1

Headcount:	SCHs:

Year 2

Headcount:	SCHs:

Year 3

Headcount:	SCHs:

Indicate likely career or student outcomes upon completion:	

Please complete the following section on financial support:

(Specify all forms of support – assistantships, fellowships, and tuition remission.)

Year 1

Number of assistantship students:	Source of funds:

Number of fellowship students (specify fellowship):	

Number of tuition remissions:	Source of funds:

Year 2

Number of assistantship students	Source of funds:

Number of fellowship students (specify fellowship):	

Number of tuition remissions:	Source of funds:

Year 3

Number of assistantship students:	Source of funds:

Number of fellowship students (specify fellowship):	
Number of tuition remissions:	**Source of funds:**

Attachments

Please attach the required files by navigating to the Proposal Toolbox and clicking in the top right corner of the form.

Faculty List*	(•) Attached ( ) Not Applicable
Support from involved units that no duplication exists*	( ) Attached (•) Not Applicable

Administration Use Only

Catalog Ownership:	College of Optics and Photonics
Program OID	7865
Program Type	Doctoral
Degree Type	Doctor of Philosophy
Status*	(•) Active-Visible ( ) Inactive-Hidden

College of Optics and Photonics - Optics and Photonics PhD

Program Description

The Optics and Photonics PhD program provides the highest-quality education in optical science and engineering, allowing students to conduct scholarly, fundamental, and applied research, while aiding in the development of Florida's and the nation's technology-based industries.

Research activities cover all aspects of optics, photonics, and lasers, and the Center for Research and Education in Optics and Lasers (CREOL), the Florida Photonics Center of Excellence (FPCE), and the Townes Laser Institute (TLI) are integral parts of the College of Optics and Photonics. Current research areas include: linear and nonlinear guided-wave optics and devices, high speed photonic telecommunications, fiber optic fabrication, fiber optic communications, solid state laser development, nonlinear optics, laser-induced damage, quantum-well optoelectronics, quantum optics, photonic information processing, infrared systems, optical diagnostics, optical system design, image analysis, virtual reality, medical imaging, diffractive optics, optical crystal growth and characterization, high intensity lasers, x-ray optics, EUV sources, optical glasses, laser materials processing, free-electron lasers, and light matter interaction.

The College of Optics and Photonics (COP) was the first program to be offered the distinction of a college devoted to Optics in the United States. The College of Optics and Photonics has grown rapidly and now has 55 faculty members and faculty with joint appointments, 41 research scientists and 148 graduate students with research activities covering all aspects of optics, photonics, and lasers. Research expenditures are over $10 million annually, with more than 20 percent of the funding coming from industrial partners, illustrating the effectiveness of the commitment to partnerships that is a foundational value of the COP.

Curriculum

The Optics and Photonics PhD program is intended for students with a bachelors or master's degree in Optics, Electrical Engineering, Physics, or closely related fields who wish to pursue a career in research or academia. Students with degrees in related fields may be required to take undergraduate articulation courses determined by the program director on a case-by-case basis.

Total Credit Hours Required: 72 Credit Hours Minimum beyond the Bachelor's Degree

Students are required to pass a qualifying examination, usually taken after 12 months in the program. About one year after passing the qualifying exam, students must take a candidacy examination, form a dissertation committee, and submit an approved plan of study before being admitted to candidacy doctoral status. The PhD core courses are not absolutely required, but they have been designed to include a significant portion of the material upon which the qualifying examination is based. Consequently, students are strongly encouraged to include most of these courses in their plan of study.

The Optics and Photonics PhD program requires a minimum 72 credit hours beyond the bachelor's degree, of which more than 50 percent should be at the 6000 level or higher. These hours must be comprised of:

- At least 39 credit hours of formal coursework satisfying the following requirements:

- at least 30 credit hours must be Optics (prefix OSE) courses.
- at least 6 credit hours must be science and engineering graduate research methods/laboratory courses of which at least 3 credit hours must be in Optics.

- at least 15 credit hours of Dissertation (OSE 7980)

Additional notes on the curriculum:

- Up to 30 credit hours of appropriate graduate courses earned in a master's program from accredited universities may be waived with approval from the graduate committee.
- Only courses with grades of "B" or better can be transferred.

Required Courses: 24 Credit Hours

Core Courses: 18 Credit Hours

OSE 6111 Optical Wave Propagation
OSE 5115 Interference and Diffraction
OSE 5312 Light Matter Interaction
OSE 6211 Imaging and Optical Systems
OSE 6474 Fundamentals Optical Fiber Communications
OSE 5525 Laser Engineering
[Right] OSE 6536 Semiconductor Lasers may be used as a substitute for OSE 5525 Laser Engineering

Research Methods/ Laboratory Courses: 6 Credit Hours

At least 6 credit hours of approved Optics and related science/engineering research methods/laboratory courses are required from the list below. At least one must be in Optics (OSE). One required laboratory may be waived if the student can demonstrate an equivalent hands-on proficiency in that laboratory specialization. These research methods/laboratory courses count toward the formal graduate course work requirement.

OSE 6234C Applied Optics Laboratory
OSE 6455C Photonics Laboratory
OSE 6526C Laser Engineering Laboratory
OSE 6615L Optoelectronic Device Fabrication Laboratory
[After] Other graduate science and engineering labs may be taken with college approval.

Elective Courses: 33 Credit Hours Minimum

Restricted Electives: 6 Credit Hours

In addition to the required courses above, students will need to complete an additional 6 credit hours to meet the 30 hours of formal Optics (OSE) course work required. An additional three hours of optics coursework will also be required if the student waived out of one of the research methods/laboratory courses above, or if one of the laboratory courses taken is not an OSE prefix.

Other courses with significant optics content may be accepted toward the Optics (OSE) coursework requirement, upon approval by the Associate Dean.

A listing and description of courses offered by the College of Optics and Photonics is found in the "Courses" section.

Unrestricted Electives: 27 Credit Hours Minimum

A combination of formal course work and research hours comprise the remaining unrestricted hours. At least 9 of these hours must be formal course work, which may be graduate optics, science or engineering courses. In addition to the 9 hours, 18 credits may be regular formal course work, doctoral research hours, independent study, or doctoral dissertation hours. The independent study hours are limited to a maximum of 3 credit hours. Any courses outside of the graduate optics, science or engineering disciplines must be approved by the college associate dean.

Dissertation: 15 Credit Hours Minimum

- OSE 7980 - Dissertation Research **15 Credit Hours**

Qualifying Examination

Before students are eligible to take the candidacy examination, they must pass a written qualifying examination, which for full-time students is normally taken at the end of the first year of graduate study. The purpose of the qualifying exam is for the student to demonstrate mastery of the fundamentals of optics and photonics. The exam is administered by the doctoral qualifying examination committee, which consists of several graduate faculty members representing the appropriate disciplines, appointed by the director or designee. The committee's duties include the preparation and grading of the examination material, and it may solicit input from other interested faculty. The exam is a closed book written exam in the general areas of electromagnetic foundations of optics, interference, diffraction, coherence, linear systems imaging, and light matter interaction. Students who do not pass the qualifying examination in two attempts will not continue in the program.

Candidacy Examination

Students are required to successfully complete the candidacy examination before admission to full doctoral status. The purpose of the candidacy exam is for the student to demonstrate his or

her readiness for the PhD program through preliminary research work in the chosen field of study. The candidacy exam is comprised of written and oral portions. The exam is administered by the members of the student's dissertation advisory committee who are full faculty members of the College of Optics and Photonics. External committee members of the dissertation advisory committee are not appointed until after the student has passed the candidacy exam. The exam is normally taken near the completion of required course work. Students must pass the candidacy exam before registering for doctoral dissertation hours (OSE 7980).

Admission to Candidacy

The following are required to be admitted to candidacy and enroll in dissertation hours:

- Completion of most course work, except for dissertation hours.
- Successful completion of the candidacy examination.
- The dissertation advisory committee is formed, consisting of approved graduate faculty and graduate faculty scholars.
- Submittal of an approved program of study.

Dissertation Proposal and Defense

Approximately one year after passing the general candidacy examination, and after the student has begun research, the student will write a dissertation proposal and present it to their dissertation advisory committee for its approval. The proposal must include the research performed to date and the research planned to complete the dissertation. The committee, which consists of three graduate faculty members from the College of Optics and Photonics and one faculty member from outside the college, must be approved by the director or designee and will meet annually to review the student's progress. The dissertation advisory committee also administers the dissertation oral defense examination.

Independent Learning

The dissertation satisfies the independent learning experience.

Application Requirements

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline.

In addition to the general UCF graduate application requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Bachelor's or master's degree in Optics, Electrical Engineering, Physics or closely related discipline.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation

- Goal statements: Personal Statement and Research Statement
- Personal Statement should describe your career goals. Please include why you want to come to CREOL and how the PhD will help you achieve your ultimate career goals. Do you want to work in the industry or do you want to go into academia?
- Research Statement should describe the type of research that you are most interested in or specific faculty members that you wish to work with. If there are multiple areas of research, please provide information for each area.
- Résumé

Students with degrees in related fields may be required to take undergraduate articulation courses determined by the program director on a case-by-case basis.

Application Deadlines

Optics and Photonics PhD	***Fall Priority**	**Fall**	**Spring**	**Summer**
Domestic Applicants	Jan 15	Jul 1	Dec 1	Apr 1
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
*Applicants who plan to enroll full time in a degree program and who wish to be considered for university fellowships or assistantships should apply by the Fall Priority date.				

Financials

Graduate students may receive financial assistance through fellowships, assistantships, tuition support, or loans. For more information, see the College of Graduate Studies Funding website, which describes the types of financial assistance available at UCF and provides general guidance in planning your graduate finances. The Financial Information section of the Graduate Catalog is another key resource.

Fellowships

Fellowships are awarded based on academic merit to highly qualified students. They are paid to students through the Office of Student Financial Assistance, based on instructions provided by the College of Graduate Studies. Fellowships are given to support a student's graduate study and do not have a work obligation. For more information, see UCF Graduate Fellowships, which includes descriptions of university fellowships and what you should do to be considered for a fellowship.

Contact Info

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Telephone: 407-823-6817

CROL 231

Alma Montelongo

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CREOL Room 208

Graduate Admissions

Ashley Rivera Mercado

gradadmissions@ucf.edu

Telephone: 407-823-2766

Millican Hall 230

Online Application

Graduate Admissions

Mailing Address

UCF College of Graduate Studies

Millican Hall 230

PO Box 160112

Orlando, FL 32816-0112

Institution Codes

GRE: 5233

GMAT: RZT-HT-58

TOEFL: 5233

ETS PPI: 5233

Graduate Fellowships

Grad Fellowships

Telephone: 407-823-0127

gradfellowship@ucf.edu

https://funding.graduate.ucf.edu

Graduate Financial Aid

UCF Student Financial Assistance

Millican Hall 120

Telephone: 407-823-2827

Appointment Line: 407-823-5285

Fax: 407-823-5241

finaid@ucf.edu

http://finaid.ucf.edu

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College of Optics and Photonics - OSE 6536 Semiconductor Lasers

2020-2021 Graduate Course Revision

General Catalog Information

Read before you begin

1. TURN ON help text before starting this proposal by clicking in the top right corner of the heading.

2. FILL IN all fields required marked with an *. You will not be able to launch the proposal without completing required fields.

3. LAUNCH proposal by clicking in the top left corner. DO NOT make proposed changes before launching proposal. **Changes will only be tracked after the proposal is launched.**

Course revisions must be accompanied by a course syllabus and rationale. Departments must also submit an electronic syllabus to the college curriculum person.

Proposal Type:	Grad Course Revision
College:*	College of Optics and Photonics
Unit / Department / College:*	College of Optics and Photonics

IMPORT COURSE NOW! Please use the Import feature to import the course information from the Catalog by clicking in the top left corner of the form. Do **not** type the course prefix and code.

Prefix:*	OSE
Code:*	6536
Course Title:*	Semiconductor Lasers
30 Character Abbreviation:*	Semiconductor Lasers
Full Title:*	OSE 6536 Semiconductor Lasers
Course Instructor	Sasan Fathpour

(Must be Approved Graduate Faculty/Scholars):

Department Chair Phone Number:* 407-823-6817

Dept Chair Email* hagan@creol.ucf.edu

Complete the remaining required fields and LAUNCH this proposal by clicking ▶ in the top left corner! Do not begin revisions until **after** launch. Course revisions before launch will not be tracked.

Course Description:* Light-matter interaction, thermal physics and solid state physics to understand, analyze, and engineer semiconductor lasers with different active region dimensionalities.

Prerequisite(s): Graduate standing and ~~**OSE 5312 or OSE 5525 or**~~ OSE 5414 or C. I.

Corequisite(s):

Does this proposal include revisions to prerequisites?* (•) Yes ( ) No

Grading Scheme: ABCDF

Credit Hour Information

As part of UCF's accreditation with SACSCOC, we are required to have a formal model of credit hour designations. The following chart provides a general framework for faculty to use as they make course proposals. The elements will help faculty to better determine the credit hour designation for a course and help the institution with a standard approach in this determination.

Credit Hour Design Options

Credit Hour	1	1	1
(Formal) Instruction Time - Class Hours or Online Module, etc.	1	1	1
Lab/Studio/Field work	0	1	2
Out-of-Class (homework, course readings, group work, online posts, etc)	2	1	0
Total Course Engagement	3	3	3

Any combination of these elements that extend beyond the 3 hours of Total Course Engagement, could be considered a 2 credit hour class. The course should try to maintain a 1:3 ratio.

1 Credit hours = 3 hours of Total Course Engagement

2 Credit hours = 6 hours of Total Course Engagement

3 Credit hours = 9 hours of Total Course Engagement

4 Credit hours = 12 hours of Total Course Engagement

Please note the Out-of-Class hours will not appear in the graduate catalog. This field is for information only.

For further review, please see the SACSCOC definition: http://www.sacscoc.org/pdf/081705/Credit%20Hours.pdf

Credit Hours:*	3
Instruction Time:*	3
Lab / Studio / Field Work Hours:*	0
Out-of-Class Hours:*	6
Total Engagement Hours:*	~~3~~ 9

NOTE: For a repeatable course, indicate in the syllabus what will remain the same and what will change when the course is repeated. Also indicate who approves content before a course is repeated.

Repeat for credit?

Activity Log

Rachel Agerton-Franzetta

+ No

○ Yes ◉ No

If yes, indicate the degree program name and the total times the course may repeated.

If the course you are revising is a split-level class, please note this revision form will only impact the graduate side of the course. The undergraduate component of the course should be revised through the Undergraduate Curriculum Committee. As a reminder, the graduate syllabus should clearly demonstrate more advanced subject matter, expectations, and rigor.

Split-Level Class:* ○ Yes ◉ No

List undergraduate split-level course:

Term of Offering

When will the course be offered?

Activity Log

Rachel Agerton-Franzetta

+ Odd Spring

+ Even Spring

~~Occasional~~

Odd Fall Even Fall Odd Spring Even Spring Odd Summer
Even Summer Every Semester Occasional

Intended Utilization of Course

The course will be used primarily as: Required Course Elective Course

Justification for Course Revision

What is the rationale for revising this course?* removing pre-rquisites that are not needed. This course may be used as a substitute for a core course. Program change to follow.

What grad programs/tracks require or recommend this course for graduation? none

If not a major requirement, what will be the source of students? Optics and Photonics, possibly Electrical Engineer and Physics

What is the estimated annual enrollment? 20

Possible duplications and conflicts with other departments or colleges should be discussed with appropriate parties. Please detail discussion you have had.

Detail Discussion No duplications or conflicts with other depts. This is only a pre-requisite update for an existing class.

Course Syllabus Policy

The University of Central of Florida has established guidelines as it relates to the form and structure of all course syllabi. An effective syllabus provides an overview of the purpose of a course, outlines course requirements, and defines expectations for student performance. Faculty members are responsible for developing course content and selecting pedagogical approaches for their courses. Leveraging this policy to develop them will provide a consistent approach for presenting essential information that supports learning and ensures that UCF is in compliance with the standards set forth by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) and other accrediting bodies.

To this end, each syllabus should include the following required elements:

- **Information from the official Schedule of Classes**
- **Instructor and/or GTA contact information**
- **Explicit, public description of the course**
- **Student learning outcomes**
- **Sequence of course activity**

Sequence of course activity
Assessment and grading procedures
Course Materials and Resources
Core policy statements

Academic integrity statement including definition(s) of and consequences for academic misconduct
Statement directing students needing accommodations to work with faculty and with Student Accessibility Services to ensure equal access to educational activities
Statement regarding emergency procedures and campus safety, encouraging students to be aware of their surroundings and familiar with actions to take in various types of emergencies
Statement regarding accommodations for active duty military students

Full details of the syllabus policy can be found at: https://policies.ucf.edu/documents/4-403.1RequiredElementsoftheCourseSyllabus.pdf

Course Syllabus Policy*	☑ I have aligned this syllabus per the UCF syllabus policy.

Attachment List

Please attach any required files by navigating to the Proposal Toolbox and clicking in the top right corner.

Check	☐ I have completed all relevant parts of the form.
Attached	☐ I have attached a course syllabus and rationale.

Administration Use Only

Catalog Ownership:	College of Optics and Photonics
Course OID	
Course Type	Optical Science and Engineering
Status	◉ Active-Visible ○ Inactive-Hidden

PeopleSoft

Academic Group	
Career	

Print in Catalog	
Effective Date	
Lab Fee	
CRSE_ID	044047

SEMICONDUCTOR LASERS
(OSE6536, 3 CREDIT HOURS)

INSTRUCTOR: SASAN FATHPOUR

SPRING 2020; TUES. & THURS. 1:30-2:45 PM; ROOM: CREOL A214
OFFICE HOURS: TUESDAYS, 3:00-4:00 PM, RM A216

CATALOG DESCRIPTION
This course covers the light-matter interaction, thermal physics and solid state physics needed to understand, analyze, and engineer semiconductor lasers with different active region dimensionalities.

COURSE GOALS
The course complements the OSE graduate courses on 'fundamentals of optoelectronic devices', 'integrated photonics' and 'optical communication systems' to deepen students' education in photonic engineering. The course's goal is elucidating the key principles underlying the analysis and design of semiconductor lasers, with an emphasis on the engineering and practical aspects of them. The students should attain basic understanding and design capability for advanced semiconductor lasers, at the end of the course.

COURSE APPROACH
In order to analyze and design semiconductor lasers, it is necessary to study the components that constitute them, the principles that underlie their operation, and their functional characteristics from the perspective of a device engineer. To this extent, the course begins with a broad phenomenological approach to generic diode laser principles. It then gets into advanced discussions on semiconductor band theory, and optical gain and dynamic effect in diode lasers. The course ends with analysis of advanced laser structures commercially in use and brief discussions on potential future directions.

PREREQUISITE
- Graduate Standing, OSE 5414, or Consent of Instructor:
  - Basic knowledge of photonics, lasers and semiconductors at the undergraduate level
  - Knowledge of optoelectronics at graduate level (OSE5414 Fundamentals of Optoelectronics) and basic quantum mechanics

REQUIRED READINGS:
Course Website:
https://webcourses.ucf.edu/courses/1268726

SUGGESTED TEXTBOOKS:
- S. L. Chuang, *Physics of Photonic Devices*, 2nd Ed., Wiley, 2009.
- L. A. Coldren, S. W. Corzine, and M. Masanovic, *Diode Lasers and Photonic Integrated Circuits*, 2nd Ed., Wiley, 2012.
- P. Bhattacharya, *Semiconductor Optoelectronic Devices*, 2nd Edition, Prentice Hall, 1997.

COURSE OUTLINE

1. Overview of Semiconductor Lasers

2. Phenomenological Modeling of Generic Diode Lasers
   - Photon and carrier density rate equations
   - Threshold and lasing conditions
   - Light-current characteristics

3. Electronic Band Structures in Semiconductors
   - Primer of lattice structures and quantum mechanics
   - Empty lattice of nearly free electron band structure
   - Kronig-Penney model
   - Pseudopotentail method
   - Kane's model
   - $\boldsymbol{k}.\boldsymbol{p}$ model with spin-orbit interaction
   - Band structure of semiconductor quantum wells
   - Effect of strain on quantum wells
   - Band structure of superlattices

4. Gain and Current Relations
   - Radiative transitions, Matrix elements and Reduced density of states
   - Optical gain, lineshape broadening and gain spectrum
   - Spontaneous emission and Purcell effect
   - Nonradiative transitions
   - Active material characteristics

5. Dynamic Effects
   - Small-signal analysis of the rate equations
   - Large-signal analysis of the rate equations
   - Relative intensity noise
   - Linewidth enhancement factor and chirping
   - Carrier transport and feedback effect
     - Injection locking

6. Advanced Semiconductor Lasers
   - Distributed feedback (DFB) lasers
   - Vertical-cavity surface-emitting lasers (VCSELs)
   - Tunable and externally-modulated lasers
   - Quantum cascade lasers
   - Microcavity lasers

GRADING

Homework Assignments: 30%
Midterm Exam: 30%
Final Exam or Project: 40%

University Rules on Professionalism and Ethics
Per university policy and plain classroom etiquette, mobile phones, etc. must be silenced during all classroom lectures, unless you are specifically asked to make use of such devices for certain activities.

Academic dishonesty in any form will not be tolerated. If you are uncertain as to what constitutes academic dishonesty, please consult The Golden Rule, the University of Central Florida's Student Handbook (http://www.goldenrule.sdes.ucf.edu/) for further details. As in all University courses, The Golden Rule Rules of Conduct will be applied. Violations of these rules will result in a record of the infraction being placed in your file and the student receiving a zero on the work in question at a minimum. At the instructor's discretion, you may also receive a failing grade for the course. Confirmation of such incidents can also result in expulsion from the University.

Students with Special Testing/Learning Needs
Students with special needs and require special accommodations must be registered with UCF Student Disability Services prior to receiving those accommodations. Students must have documented disabilities requiring the special accommodations and must meet with the instructor to discuss the special needs as early as possible in the first week of classes. UCF Student Disability Services can be contacted at http://www.sds.sdes.ucf.edu/, or at (407)823-2371.

Academic Ethics Specific to This Lab Course
It is the nature of a laboratory course that you will be working in groups. Obviously, those of you who are lab partners will be using the same raw data. You are encouraged to discuss your observations and insights with your lab partners; however, each of you has to write your own ORIGINAL lab reports.

Cheating and plagiarism are serious breaches of the UCF Code of Honor as described in the UCF Golden Rule and the UCF Creed, and will not be tolerated in this course. All cases will be reported to the Office of Student Conduct (OSC).

Definitions
Cheating: any unauthorized assistance in graded, for-credit assignments.
Plagiarism: appropriating the work of others and claiming, implicitly or explicitly, intentionally or unintentionally, that it is your own.

With increased use of the internet, digital plagiarism is becoming more of a problem on campuses everywhere. You are encouraged to use the internet; however, electronic copying and pasting of material directly into reports and papers without proper reference of the source is blatant plagiarism. **Always reference the sources of information.**

Providing a fellow student with experimental data from an experiment in which he/she did not participate is also forbidden. All parties that are involved in such practice will be reported to UCF Office of Student Conduct (OSC).

If there is any question concerning acceptable practice in this laboratory course, do not hesitate to ask the instructor.